This Week's News

MARKETING and Merchandising have not always been synonymous in the oil industry.

Marketing too often has meant finding an outlet for the gasoline, fuel oil and perhaps other products the refinery turned out. The price—and profit—in the transactions has too often been secondary.

But now the selling of oil products, through stations and other channels, is coming to be looked upon as merchandising, with the same problems affecting it as are experienced in other lines of business.

This new definition of oil marketing is the keynote on which NATIONAL PETROLEUM NEWS is building its March 20 Modern Marketing Methods issue.

Through special articles and through special advertising pages as well this issue will carry the story of how modern equipment and modern methods are enabling oil distributing companies to find greater profits in the face of today's competition.

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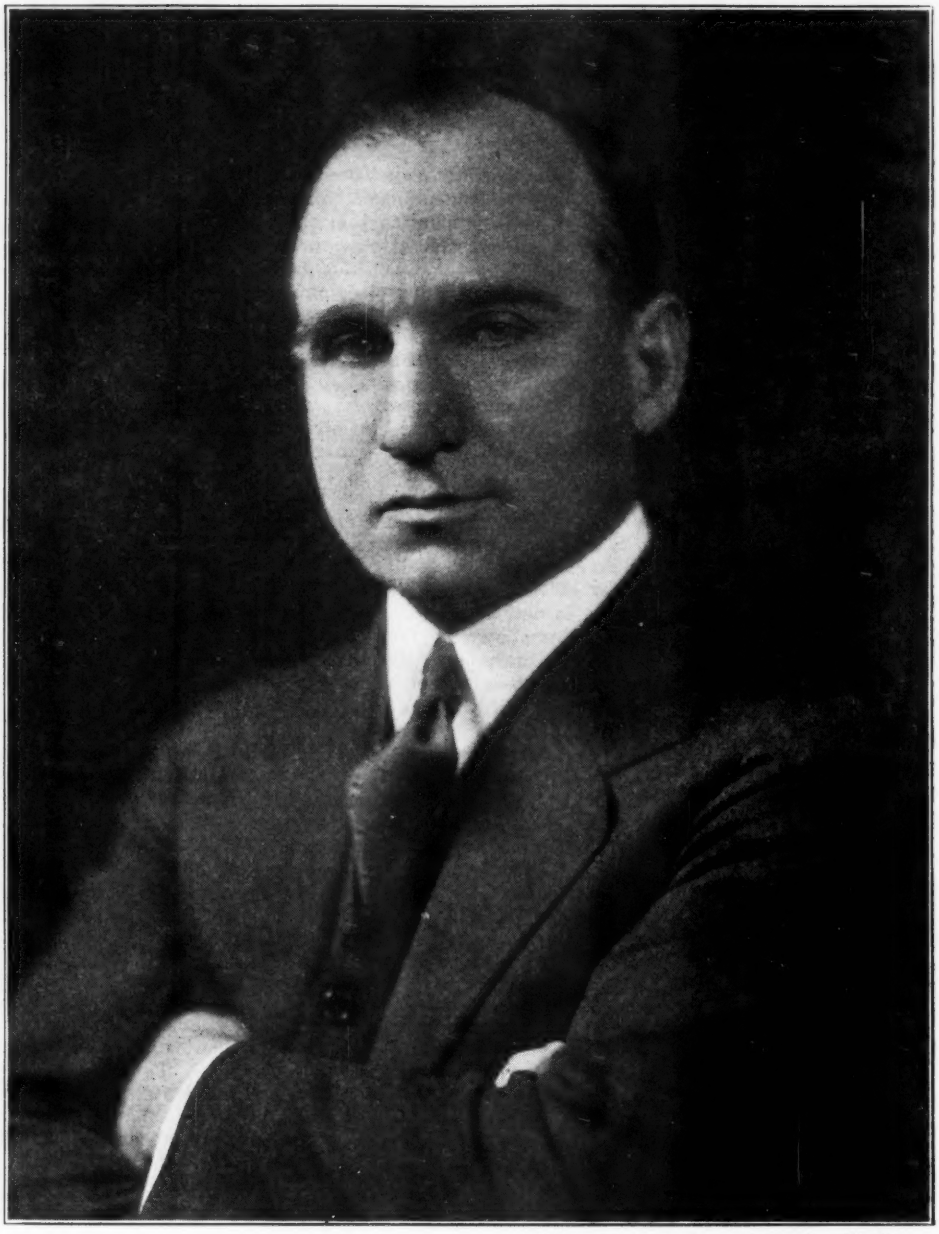


—Underwood & Underwood Studios, N. Y.

HERE'S the man under whose general direction our industry is carrying on its present study of world wide production and consumption of petroleum products, to the end of finding some cooperative means for correcting periods of over production such as our industry is now facing.

R. C. Holmes, president of The Texas Co., serves in this capacity through being chairman of the American Petroleum Committee's general committee appointed a few weeks ago.

Mr. Holmes has been the directing head of The Texas Co. since the spring of 1926. He is one of the developers of the Holmes-Manley cracking process. He built The Texas Co.'s first refinery at Port Arthur in 1906 and ran it until directors of the company recognized his further ability and made him vice-president and chairman of the manufacturing and marketing committee, which position he held until he was elevated to the presidency.

NATIONAL PETROLEUM NEWS

Adjusting Supply to Demand by Markets Endorsed by Oil Board

WASHINGTON, March 4

THE Federal Oil Conservation Board has stamped its o.k. on the efforts of the American Petroleum Institute to survey the principal producing, refining and marketing territories and find, if possible, some means for adjusting to some extent, supply to demand in each.

This is in the third report of the oil board, an outline of which went to President Coolidge on his last day in office. The full report will likely be available within a month.

This third report is devoted to the world petroleum situation. The first report (September, 1926) took up conditions in this country alone and the second (January, 1928) went in detail into the question of substitutes for petroleum products from all known sources in this country.

The third report will also endorse legislation to allow unit development of new oil fields, a program to which the institute is also committed as a means of bringing greater stability to the operations of all branches of our industry.

This report of the oil board is signed by Roy O. West, secretary of the interior, chairman; Dwight F. Davis, secretary of war; Curtis D. Wilbur, secretary of the navy; and William F. Whiting, secretary of commerce. Except for Secretary Wilbur this is an entirely different personnel from the oil board when it was organized with Dr. Work as secretary of the interior, its chairman.

Before this article is read President Hoover's cabinet will be in office and another new personnel will make up the oil board, if it is to continue to function. What may be read into the board's report as a suggestion for its further functioning is contained in the following, the conclusion of the outline of the third report.

"Opportunities for additional studies in the domestic considerations of the problem also are evident. A policy of conservation intended to maintain production of a natural resource in accordance with the legitimate need for that resource must be based first upon a definite understanding of the complicated conditions of national and regional demand, and, second, upon a broader knowledge of what constitutes a sound and economic principle of production control.

"Certain regions produce in excess of local requirements, while other more populous areas depend upon other producing regions for a major portion of their petroleum needs. Within a country of such vast proportions as the United States, producers of crude petroleum and manufacturers of refined products should have definite information of local and national market requirements and the relationships which exist between producing and consuming regions and of the potential possibilities of producing areas together with the physical limitations of control and expansion of these areas.

"A DEFINITE knowledge of demand and of production control will, in themselves, tend to retard the overexpansion of refining and marketing facilities and the overproduction of oil. Studies which tend to increase the fund of knowledge on these two phases of the problem, whether initiated by individual companies and associations or sponsored by the Federal Government, should be fostered."

It is the last two paragraphs of this quotation that apparently describe the same policy upon which the institute committees are now functioning, to bring into effect a more natural relationship between crude supply, refinery output and demand for petroleum products in what might be described as natural territorial markets.

Importing greater quantities of foreign crude, and at the same time holding the brake on output of our own resources, is suggested in the outline of the report as a logical conservation measure. This is to be found in that portion of the report given over to "America's Relative Situation."

Pointing out that, while production of crude in this country in 1927 was 72 per cent of the world output, our total resources are only 18 per cent of those of the whole world, the report goes on to say the obvious inference is that the United States is exhausting its reserves at a dangerous rate.

"The depletion rate of our own resources can be brought more into accord with that of foreign resources only in one way—by importing a greater quantity of crude petroleum," the report goes on to say. "The present imports of Mexican and South American crude oil come largely from American operators and, while not obtained from United States oil sands, they are the product of American engineering and enterprise. Cooperation in the development of foreign oil fields, through technical assistance and the further investment of American capital, would seem to be a logical conservation measure."

More progress has been made, in the four years of existence of the board, towards cooperation within the industry and also between state and federal officials and the government, than had been hoped, the report states.

"The acceptance of the principle of conservation as a practical policy by the foremost executives of the larger oil companies is a hopeful sign of the times," reads the report.

THE increase in demand for petroleum may be expected to continue until and impending shortage causes a radical advance in prices, the board believes. At another place on this subject it says:

"It may be assumed in advance, for reasons which have been mentioned in previous reports, although greater economy of use may be attained, this alone will not appreciably flatten the curve of our constantly increasing consumption. At the present time no other means of limiting the use of petroleum products, or lessening the gross amount consumed, is apparent other than the usual economic control exercised by price."

Sixty Day Drilling Moratorium Suggested in "The Lamp"

CLEVELAND, March 4

A MORATORIUM on drilling for 60 days, together with no release of present shut in production, is suggested by the Lamp, official publication of the Standard Oil Co. (New Jersey) as a solution of the present problem of too much crude.

In its February issue, under the caption, "Caution—Run Slow," the Lamp points out that the aggregate initial production of wells completed in January of this year was 43 per cent larger than a year ago; and that the actual number of wells completed was 44 per cent larger.

The editorial from the Lamp follows:

* * *

"One of the most disastrous years in the recent history of the petroleum industry was 1927, which saw an accumulation of 66,000,000 barrels of oil in the United State. The stocks of crude and products at the beginning of that period were 528,000,000 barrels, an amount greatly in excess of what was required as an adequate reserve of oil above ground, and the increase was therefore wasteful.

"How did the industry profit in 1928 by the lesson of 1927?

"There were drilled in the United States last year 12,357 producing wells with an average initial production of 674 barrels. The story in 1927 was 14,179 producing wells with an average production of 343 barrels.

"So while drilling activity last year resulted in the completion of a smaller number of producing wells, the fact of importance is that their initial production was nearly twice that of 1927. In the earlier year the aggregate initial production was 4,864,000 barrels; in 1928 with about 15 per cent fewer wells completed, the total was 8,332,000 barrels.

"With the overproduction in 1927 lost sight of, and a further increase recorded in 1928, let us see how the industry is starting off the year 1929.

"The aggregate initial production of wells completed in the first month of the current year was 675,551 barrels. In the corresponding month of 1928 the total was 473,726. The number of producing wells completed last month —January—was 44 per cent greater and the initial production was 43 per cent larger than in the first month of 1928. That is addition, whereas the problem called for subtraction.

"With production in the United States rapidly approaching 2,750,000 barrels a day such increases in wells drilled in the flush pools make it perfectly obvious that the proration measures thus far adopted have been totally inadequate. Unless the present drilling program can be substantially and promptly modified it appears that the unhappy experience of 1927 will be repeated this year.

"Considering all of the thought and talk that has been expended on the subject of overproduction it is not flattering that so little attention has been concentrated on the basic cause of oversupply and its train of evils. That cause is the drilling of new wells. A moratorium on drilling for a period of perhaps sixty days with no release of present shut in production would go a long way toward solving the problem of the industry."

Production and Stocks At New Peaks

CLEVELAND, March 4.—Crude oil production in the United States reached the record height of 81,979,000 barrels, a daily average of 2,644,500 barrels, in January, according to the statistics of the Bureau of Mines. Crude oil stocks of all descriptions rose more than 6,000,000 barrels to 491,847,000 barrels, also a new record.

The increase in production was due to large gains in California and Texas, and a small gain in Oklahoma. California average production jumped 58,400 barrels to 754,400 barrels over the December average and Texas production was up 28,400 barrels daily average to 745,200 barrels daily. The gain in Oklahoma was 3600 barrels daily average to 738,200 barrels daily.

Stocks of crude oil in pipe lines and at tank farms and refineries east of California increased almost 4,500,000 barrels. Stocks of light crudes in California were increased 2,000,000 but stocks of heavy crudes were lowered 237,000 barrels.

"The heavy accumulation in stocks of crude oil and gasoline was reflected in total stocks of all oils, which increased 11,416,000 barrels and reached a new high level of 625,955,000 barrels," read the report.

Concerning refined products, the bureau reported:

"The daily average throughput of crude petroleum at refineries again showed a decrease but was 14 per cent above that for January, 1928.

"The daily average production of gasoline showed an increase in January but fell slightly below the record months of September and October, 1928. The daily average indicated domestic demand for gasoline in January amounted to 729,000 barrels, which represents a material decline from the previous month but is 9 per cent above January, 1928. Exports of gasoline increased but stocks reflected the decline in domestic consumption and increased sharply, from 33,066,000 barrels on hand Jan. 1, 1929, to 40,648,000 barrels on Jan. 31. This increase of over 7,500,000 barrels was the largest monthly increase ever recorded. In terms of days' supply, the stocks of Jan. 31 represent 46 days' supply as compared with 34 days' supply on hand a month ago and 47 days' supply on hand a year ago.

"Exports of kerosene increased materially, which, in conjunction with a decline in consumption, was instrumental in causing a small decline in stocks. Stocks of gas oil and fuel oil reflected heavy winter consumption and declined nearly 2,500,000 barrels east of California. Exports of lubricants increased but domestic demand decreased. Stocks of wax continued to increase as production remained at a comparatively high level and exports were below normal."

Institute Committees Are Functioning

NEW YORK, March 4.—The committees appointed by the American Petroleum Institute to consider world petroleum supply and demand, and find means for relieving the present surplus in this country, have already started to function.

Present plans call for the four subcommittees to report to the general committee, which will meet in New York March 15.

The Pacific Coast regional committee, of which K. R. Kingsbury, Standard Oil Co. of California, is chairman, held its organization meeting in Los Angeles Feb. 27. No report was issued as to proceedings in the meeting. It was said to be largely an organization meeting, with the representatives of the various oil companies showing a desire to cooperate.

The Gulf and Atlantic Coast committee tentatively set March 5 as the date of its first meeting in New York. W. M. Irish, president of the Atlantic Refining Co., Philadelphia, is chairman of this committee, taking the place of George S. Davison, president, Gulf Refining Co., Pittsburgh, first named as chairman. Mr. Davison was unwilling to serve on the committee.

The Interior regional committee held its first meeting in Tulsa Feb. 25, with W. C. Franklin, Tidal Oil Co., Tulsa, chairman. A sub-committee of four is to gather data to present back to this regional committee prior to the general committee's meeting in New York.

Profit Impossible, Say Eastern Refiners, Running at Half Capacity

By Paul Truesdell
N. P. N. STAFF WRITER

CLEVELAND, March 4

REFINERS of Pennsylvania grade crude oil are operating their refineries today at from 50 to 75 per cent of capacity, according to estimates of men in close touch with conditions.

Refiners in the Bradford district of Pennsylvania are running closer to capacity than those in the Warren and Oil City districts and some are running at their maximum. In some cases this is forced by the fact that the refining companies own the production and have to run it all.

Some refineries report that reduction in the quantity of crude charged to their stills has been going on progressively for the past year, following the consistently upward march in the price of Pennsylvania crude. There were seven steps in the advance of the price of crude during 1928 which brought it from $2.65 a barrel Jan. 1, 1928, to $3.75 on Dec. 31, 1928. The course of crude prices since Jan. 1, 1928 to date follows:

Jan. 1, 1928	$2.65
June 13	2.90
July 9	3.10
Sept. 14	3.25
Oct. 13	3.25
Nov. 9	3.50
Dec. 14	3.75
Jan. 4, 1929	4.00

The prices quoted are for Pennsylvania crude in other than the Bradford and Allegheny districts. Crude from those districts has taken a differential during the year ranging from 10 to 25 cents a barrel above that purchased in other fields. The present posted price of the Bradford and Allegheny grade oil is $4.10.

Production figures on Pennsylvania crude oil are difficult to obtain with any accuracy. Some is produced in New York, West Virginia and Ohio as well as in Pennsylvania. L. W. Young, Jr., president of the South Penn Oil Co., largest producer of Pennsylvania crude oil, states that he believes production of this oil in 1928 was just about the same as it was in 1927. A factor in his estimates is the production of Pennsylvania grade crude in Ohio, which is not shown in the Bureau of Mines figures.

Outside of Ohio, production of oil in Pennsylvania, New York and West Virginia in 1928 exceeded that of 1927 by about 362,000 barrels or 30,000 barrels a month.

With most of the refiners, serious curtailment of their runs began after the last advance which brought the price of crude to $4. This advance was posted Jan. 4. An estimate of the crude capacity of the principal Pennsylvania, West Virginia and New York refineries operating on Pennsylvania crude, the amount of crude they were running and the new refining capacity building as of Jan. 15 was compiled by a man in close touch with conditions in Pennsylvania, and is published below. This tabulation shows a total refining capacity of 62,200 barrels of which 44,800 barrels is operating now. Tidewater Oil Co. is reported to be taking 7000 barrels a day, which accounts for a total of 53,800 barrels. With a projected new plant to be built somewhere in Pennsylvania with a capacity of 1500 barrels, this list gives a total of 8300 barrels capacity building.

Total production of Pennsylvania grade crude oil is generally estimated at from 60,000 barrels to 64,000 barrels a day. Mr. Young, of the South Penn, however, says his company has been unable to find more than 56,000 to 57,000 barrels a day.

The figures given in the tabulation may not be exact but they are believed to come very close to an accurate picture. Most of the refiners have reduced their runs still further since Jan. 15. One refinery, the Titusville Oil Works, shut down entirely Feb. 15 and purposes to remain shut down, according to its management, until market prices get better or the posted price of crude oil goes down.

Refiners frankly state the reason they are cutting their runs is because they cannot make money with their raw material at its present price on one hand and their products bringing the prices on the other. Most of the plants running at full capacity or near it are forced to take

How Plants Are Cutting Down Pennsylvania Crude Runs

Company	Location	Capacity	Running	Building
Sinclair	Wellsville	2000	2000	2000
Vacuum	Olean	10,000	6000	.....
McKean County	Bradford	1000	500	.....
Pa. Oil Products	Eldred	1000	1000	.....
Bradford Oil	Bradford	1000	1000	.....
Kendall	Bradford	1500	1500	1500
Emery	Bradford	2000	1500	.....
Levi Smith	Clarendon	1000	500	.....
Tiona	Clarendon	1000	300	.....
Viking	Warren	1000	.....	.....
Warr-Penn	Warren	300	.....	.....
United	Warren	1200	1200	300
Superior	Warren	600	600	.....
Mutual	Warren	600	600	.....
Seneca (Swan & Finch)	Warren	1000	500	.....
Wilburine	Warren	700	500	.....
Conewango	Warren	1000	.....	.....
Tidioute (Empire Oil Works)	Tidioute	800	500	.....
Oil Creek	Titusville	1000	1000	.....
Titusville	Titusville	500	300	500
Crew Levick	Titusville	1500	1500	.....
American	Titusville	500	500	.....

Company	Location	Capacity	Running	Building
Pennzoil	Oil City	7000	5000	.....
Crystal	Oil City	500	500	.....
Continental	Oil City	1000	1000	.....
Independent	Oil City	1500	1500	.....
Empire	Oil City	500	500	.....
Franklin Quality	Franklin	500	.....	.....
Franklin Creek (Sonneborn)	Franklin	800	500	.....
Butler Oil Ref.	Butler	1000	600	.....
Valvoline	Butler	2000	1500	.....
Waverly	Pittsburgh	800	800	.....
Pa. Refg. Co.	Karns City	500	500	.....
Daugherty (Sonneborn)	Petrolia	1000	500	.....
Emlenton	Emlenton	1000	1000	1000
Carnegie	Carnegie	800	400	.....
Canfield	Coraopolis	800	500	.....
Freedom	Freedom	2000	1500	.....
Vulcan	Pittsburgh	1000	.....	.....
Island	Pittsburgh	800	400	.....
A. D. Miller	Pittsburgh	1000	750	.....
Ohio Valley	St. Mary's	1000	1000	1500
Elk	Falling Rock	2000	2000	.....
Pure Oil	Cabin Creek	3500	2500	.....

the crude and run it whether they make money or not, or else they dispose of the bulk of their products through their own outlets or make specialty products which bring a premium price.

The proportion of products from a barrel of Pennsylvania crude for which particularly superior merit can be claimed is so small that it is hard to make the price of those products offset the low price that other products bring. In other words, only about 25 to 30 per cent of the products net the refiner more per gallon than he pays for his crude.

The other products have to sell in competition with products made from raw material which cost only a fraction of the price of Pennsylvania crude.

"The refiner generally absolutely cannot make a profit under present conditions operating on Pennsylvania crude," says E. M. Lyons, Tiona Refining Co., president of the National Petroleum Association. And the other refiners of Pennsylvania crude oil bear him out.

Four possible sources of relief are seen by the eastern refiners. These are:

Reduction in the price of Pennsylvania crude.

Abandonment of Pennsylvania crude in favor of other oils.

Manufacture of specialties that bring a premium price because of special quality.

Further processing of lubricants into finished products which may bring a better profit than the partly finished products sold in bulk.

It is from the first source that most help is expected. Whether they are right or not, most refiners believe that production of Pennsylvania crude is increasing, due to air and water drives in old fields, among other factors. They believe the economic limit has been reached beyond which and even at which, it is impossible to refine the crude at a profit.

Abandonment of Pennsylvania crude and substitution of western oil obtained through the pipe line has often been considered seriously and has been done to some extent by some refiners, but this is looked upon as really not a remedy at all, inasmuch as the refiners have built their business on Pennsylvania products and, while it might be possible to make a profit refining and cracking other oils, it would necessitate changing the habits of a lifetime and complete revamping of plants in many cases.

Some refiners are taking up the manufacture of specialties but all realize that this is something in which they must go slow, as demand for such products is limited and a rush of refiners into this business would kill the goose that laid the golden eggs.

More and more refiners are taking on the long residuum system and running down their oil into special heavy finished motor oils for which the airplane and automobile industries are calling nowadays. Already some refiners are canning or otherwise packaging their motor oils and creating a demand for a fancy product which brings a profit. Perhaps this tendency will spread.

Western Refiners to Study Export Group

Staff Special

TULSA, March 2

AN INFORMAL discussion of the aims and purposes of the recently formed Export Petroleum Association, Inc., the election of officers, reports of various committees and an open meeting for technical men under the direction of the Manufacturers Committee are the high spots of the program announced for the annual meeting of the Western Petroleum Refiners Association at the Jefferson hotel, St. Louis, March 12 and 13.

The business session will be held March 12. While this session is in progress the technical men visit plants of the Shell Petroleum Corp., the White Star Refining Co. and the Lubrite Refining Co. The following day, March 13, the meeting for the technical men will be held.

Since the formation of the Export Petroleum Association, Inc. many of the smaller inland refiners have become deeply interested in the project but because the association's activities will affect them only indirectly, have not had an opportunity to study all phases of the organization. The W. P. R. A. therefore has invited Gilbert H. Montague, vice president and general counsel for the Export Petroleum Association, Inc. to discuss the aims and purposes of the corporation.

The refiners' business session will open at 9 a. m. with President Roy B. Jones, also president of the Panhandle Refining Co., Wichita Falls, Tex., delivering his address. The appointment of the nominating committee for election of officers and directors will be followed by the discussion of the export association by Mr. Montague. The report of the Washington counsel, Fayette B. Dow, will conclude the morning program.

The afternoon session will be opened at 1:30 o'clock, with the report of the Manufacturers' Committee, presented by Chairman L. R. Crawford, of the Producers & Refiners Corp., Independence, Kan.

B. L. Majewski of the Shaffer Oil & Refining Co., Chicago, who is chairman of the Advertising Committee will report on the advertising campaign for Mid-Continent Lubricating oils. R. R. Irwin of Kansas City, president of the White Eagle Oil & Refining Co., will present the report of the Marketing Committee of which he is chairman.

Following the report of the Nominating Committee the business sessions will be adjourned, after which the Board of Directors will hold an executive session.

The program being arranged for the technical men had not been completed March 2, but the committee has already obtained assurances that papers will be presented on several subjects which have been outlined.

Sidney Born, assistant refinery superintendent of the Transcontinental Oil Co., Tulsa, will prepare a paper on "The Relative Valuation of West Texas and Mid-Continent Crudes."

A representative of the Universal Oil Products Co., Chicago, will present a paper on "The Effect of Furnace Design on Cracking Still Operation." This paper not only will discuss the subject from the standpoint of combustion but also from the standpoint of effect on yield.

W. R. Hounsel of the Houston Oil Co., Camden, Ark., will present a paper on "Treating Cracked Gasoline."

Dan J. McQuaid, special representative for the Taylor Instrument Co., Rochester, will present a paper on "Instruments and Their Application to Refineries."

Four Samples Submitted For Zero Pour Test

CLEVELAND, March 4.—Four samples of oil have been received by J. Litsey Smith, manager of the lubricating department of the Skelly Oil Co., in response to the offer of $100 for a paraffin base motor oil corresponding to Grade 4 Liberty Aero oil as prescribed by the U. S. Government, that would flow out of a bottle when subjected to zero temperature for 1 hour. This offer was published in the Feb. 20 issue of NATIONAL PETROLEUM NEWS, page 28. Mr. Smith offered $100 for the first sample of such an oil to be delivered to him. The tests on the samples submitted are not available now.

In announcing the receipt of the four samples, Mr. Smith says:

"I am more convinced than ever that the present method of determining the pour test of lubricating oils is misleading not only to the sellers but to the users as well. Especially is this true of some airplane pilots. Constructive criticism will be welcomed."

Daily Problems of Plant Operation Discussed by Gasoline Men

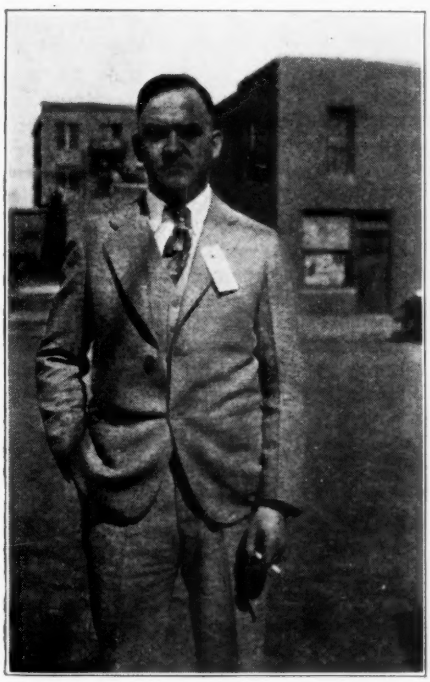
By Allen S. James
N. P. N. STAFF WRITER

RANGER, Tex., Feb. 28

APPROXIMATELY 200 natural gasoline plant operators from plants located in this vicinity drove into Ranger Feb. 26 and devoted a day to serious discussion of many problems which confront them in their daily work, the meeting having been arranged under the auspices of the Natural Gasoline Association of America.

Papers presented and generally discussed covered the care and operation of electrical equipment, absorption oils, distillation apparatus in use, belts, repressuring, operation and maintenance of the new Ford, and safety. The session was held in the American Legion hall with Dr. E. R. Lederer of the Texas-Pacific Coal & Oil Co., Fort Worth, presiding.

These annual meetings are planned



I. N. Beall, research director for Arab Gasoline Co., Eastland, Tex., one of the speakers at the plant operators meeting.

by the Association to give as many plant operators as possible an opportunity to attend, and accordingly are held at some point near the field. Many of the men who attended the meeting at Ranger came dressed in their field clothes, listened to the discussions and drove back to their plants as soon as the session was adjourned. Others brought their families and attended the entertainment and dance which followed the safety meeting in the evening.

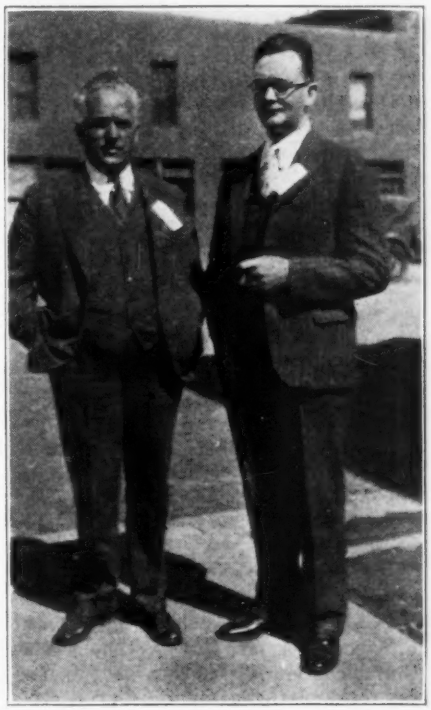
Gifford Clegg, manager of the Texas Electric Service Corp. read a paper on "Operation and Care of Electrical Equipment." He discussed in detail the installation of electric motors, and gave several pointers with reference to operation of the new motors immediately after they have been installed. He warned against stopping a motor suddenly should a bearing become overheated. Sudden stoppage, he said, would result in the motor "freezing," whereas a gradual slowing down would avoid this possibility. Mr. Clegg warned against using the hand to determine the temperature of a motor. He advised using a thermometer at all times. Several rules for tracing trouble and the remedies also were given by Mr. Clegg.

I. N. Beall, director of research for the Arab Gasoline Co. Eastland, Tex., discussed "Absorption Oils." His paper resulted in a general discussion of these oils and the experiences many plant men had had with different types of oils. The discussion was cut short, however, so those attending the meeting could partake of the barbecue lunch which was served in the Legion hall.

"Distillation Apparatus in the Use of Natural Gasoline Manufacturing," prepared by J. E. Kobernick, vice president and general manager of the Engineering Research & Equipment Co., was read at the opening of the afternoon session. This paper is published on page 72 of this issue.

"Belts and Their Maintenance," was the subject of a paper read by John A. Guffee of the Industrial Belting Co., Fort Worth. Several points brought out in his paper were discussed extemporaneously by Mr. Guffee, in many instances with word illustrations from his experiences during 30 years of belt selling. He declared while discussing the use of belt dressing that "stick belt dressing in the State of Texas alone costs more hands and legs in a year than could be piled on the top of this table." The table was a big one.

"The average man," Mr. Guffee said, "gets the stick belt dressing as close to the revolving pulley as he can. He apparently does not realize that the dressing applied to the face of the belt five or 10 feet away from the pulley will stick to the belt until it gets to the pulley. The man must stand right at the pulley and the first



Fred G. Yonker, left, was one of the reasons why the plant operators meeting was a success. Mr. Yonker is general superintendent for Chestnut & Smith Corp., at Ranger. The other gentleman is Ray E. Miller, secretary of the Natural Gasoline Association of America, who resides in Tulsa.

thing he knows, a snag on the belt catches a part of his clothing—and he loses a hand or an arm, or a leg."

The natural gasoline manufacturer was urged wherever possible to cooperate with the oil producer in any repressuring program, by Ed Guidinger of Phillips Petroleum Co., Bartlesville, Okla., who read a paper on "Repressuring and Its Relation to Natural Gasoline Production."

Repressuring many times comes just at the time when a natural gasoline manufacturer is sorely in need of more and richer gas if he is to con-

tinue the operations of his plant, Mr. Guidinger said. "Should the oil producer by repressuring be able to effect an apparent increase in ultimate production of, say 40 per cent," he stated, "then the gasoline manufacturer handling the gas from the property should reasonably expect the same result."

Mr. Guidinger urged unit operation and stated that the gasoline manufacturer, due to the improved results which he would obtain, could well afford to make an extra effort to bring all conflicting interests together, and to secure a suitable supply of gas for these operations.

A representative of the Ford agency at Dallas described the new Model A Ford in detail and gave several pointers on the care and maintenance of the machine.

The evening session was devoted to safety talks. C. L. Hightower, safety director for the Texas Pacific Coal & Oil Co., Fort Worth, discussed "Accidents in Natural Gasoline Plants." His paper contained reports of several accidents by way of illustration. He stated that the individual has not kept pace along safety lines with the plant equipment, and also declared that accident prevention was an individual problem. "Safety," Mr. Hightower said, "does not attempt to instill fear in the individual."

Don Wallace, safety director for the Mid-Continent Oil & Gas Association, discussed "Benefits of Safety to the Operator and His Family." Statistics shows, he said, that accidents in business have dropped below those in the home. He urged the wives of the operators to take an intense interest in safety work because of its benefits to their husbands.

Gasoline Specification Committee Named

CLEVELAND, March 1.—The National Petroleum Association is one organization that is going to be well represented at the oil industry conference on gasoline specifications in Washington, March 15. (See NATIONAL PETROLEUM NEWS, Feb. 27, page 31).

According to a letter sent out by Fayette B. Dow, general counsel, President E. M. Lyons of the association has named the following committee as representatives:

A. W. Scott, Empire Oil Works, Oil City; T. J. Hilliard, Waverly Oil Works, Pittsburgh; H. A. Logan, United Refining Co., Warren; G. B. Hunter, Emlenton Refining Co., Emlenton; H. H. Greene, Kendall Refining Co., Bradford; P. S. Tarbox, Independent Refining Co., Oil City; W. S. Zehrung, Pennzoil Co., Oil City. In addition to the committee, O. P. Keeney, who is the association's representative on the advisory board to the technical committee of the Federal Specifications Board, will attend.

Appointment of this committee, Mr. Dow points out, does not bar any member from attending the conference or sending representatives. All are invited.

News of the appointment of the representative committee came in after the comment on page 66 of this issue had been written and put in type.

White Eagle To Sell Ethyl Gasoline

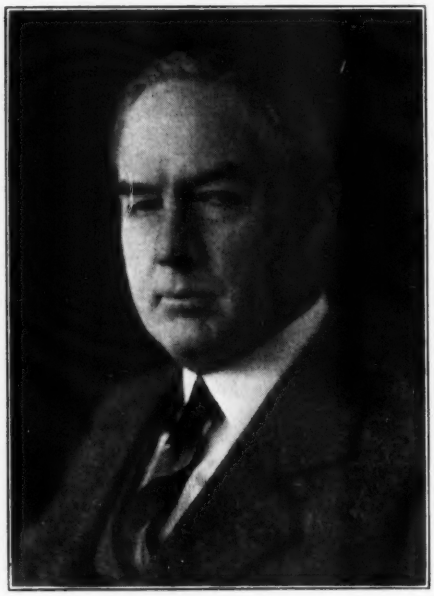
CLEVELAND, March 4.—Within 30 days the White Eagle Oil & Refining Co. will be distributing Ethyl gasoline under the name, White Eagle Balanced Ethyl gasoline in the 12 middlewestern and western states in which the company has distribution. This is according to a statement of R. R. Irwin, president of the company. Mr. Irwin says the company has developed a special gasoline for blending with the Ethyl fluid.

Beaumont Parks Dies on Venezuelan Trip

CHICAGO, Mar. 1.—Beaumont Parks, senior vice president of the Standard Oil Co. of Indiana passed away Monday, February 25, 1929 in the hospital of the Lago Petroleum Co. at Maracaibo, Venezuela.

Mr. Parks, accompanied by Mrs. Parks and a number of Standard Oil Co. executives, left Chicago about Feb. 1 on a combined vacation and inspection tour of the companies properties in the Dutch Indies and South America. After an inspection of the Pan-American Petroleum & Transport Co.'s new refinery on the Island of Aruba, a Dutch possession in the Indies, the party left for their headquarters at Lake Maracaibo. While enroute, Mr. Parks suffered a stroke and it was thought best to take him to the Lago Petroleum Co.'s hospital, where he died Monday morning of cerebral hemorrhage.

Mr. Parks was in his 60th year at the time of his death. He was born at Cleveland, Ohio on December 25, 1868 and passed most of his boyhood years there. He was graduated from the Western Reserve University of Cleveland in 1890 and then obtained a position as timekeeper at the new Standard Oil refinery being built at Whiting, Indiana. He gradually worked his way upward and in the fall of 1904 was made assistant general superintendent of the Whiting refinery. He served as assistant general superintendent until September, 1914 when he was made general superintendent in charge of the refinery.



Beaumont Parks

In 1919, Mr. Parks was elected to the Board of Directors of the Standard Oil Co. of Indiana and was transferred to the Chicago office where he was made assistant general manager of manufacturing. In subsequent years he gradually rose higher in the organization and at the time of his death was senior vice president in charge of all manufacturing operations of the company, as well as being a director of the Pan-American Petroleum and Transport Co. and the Midwest Refining Co.

During his residence at Whiting Mr. Parks took an active interest in the civic and social life of the community, serving six years as president of the Board of Education and from January, 1910 to 1914 was Mayor of Whiting. For several years he was president of the Manufacturers Association of Whiting. Mr. Parks was affiliated with the Masonic order and was a member of the Hudson chapter of the Alpha Delta Phi.

Surviving Mr. Parks are his wife Helen; son, Donald and grandson Robert, of Whiting; a sister, Mrs. Charles Stocker of Cleveland, and one brother, Robert Parks, of Alton, Illinois.

No definite funeral arrangements have been made. The Standard of Indiana tanker which is bringing the party and body of Mr. Parks is expected to dock at New York on Thursday, March 7 and the body will probably arrive at Chicago on Friday, March 8. It is expected that the funeral will be on the following Monday, March 11 with interment in a crypt in the mausoleum at Rosehill Cemetary, Chicago.

A Standard Oil Co. of California leased station at San Francisco. The sign over the station roof has been put up hastily to cover the original company name

Causes for 'Gas' Price War on Pacific Coast

OUT of a gain in gasoline gallonage in the four states of California, Nevada, Oregon and Washington in 1928, of 122,000,000 gallons, miscellaneous companies and stations, other than those operated by the seven principal oil companies, increased their business almost 100,000,000 gallons. The figures are from the gasoline tax reports.

In a nutshell that is the reason for the present retail gasoline war along the Pacific Coast.

All told the gain in gasoline gallonage in the four states was around 9 per cent. The business of other than the big companies gained almost 85 per cent. Some of the seven big companies, such as the Standard of California, Shell, Richfield, among others, lost from their 1927 gallonage.

To secure a part of this increased gallonage going to the independent service stations the oil companies have been offering wider margins and better terms to these independent dealers to handle their gasoline. Some companies are now offering a seven-cent margin below the posted service station price, on a three-year contract. These independent station dealers are organized in Los Angeles, San Francisco and other points and for the most part hang together.

The wide margins to the independent stations led to price cutting on the part of some of these stations. The oil companies were unable to cope with local price cutting in California, at any rate, the uniform price law of the state forcing them to cut their prices over the state uniformly.

So the oil companies recently took recourse to a plan of leasing individual stations to operators which had been started some three years ago as a more efficient plan to operate stations. They sold to the operator at a leased station at about the same margin they gave the independent station and the operator of the leased station could sell gasoline at any price he chose. Generally speaking he chose to meet the price of the nearby independent station. Prices have been hammered down, until two weeks ago gasoline was selling at 10 and 11 cents at some stations. As the retail price went down the oil companies followed with reductions in their tank wagon and official service station posted prices.

The oil companies covering this wide marketing territory of four states are doing business in an area generally much more sparsely settled than marketing territories of eastern oil companies.

On the other hand their investment in bulk and service stations, trucks and so on is much greater per unit than in the east. Investments of $12,000 to $15,000 in gasoline stations, on properties leased for $200 to $250 a month are not at all unusual.

The oil companies doing business three or four years ago—Standard, Shell, Union Oil and Associated, met this situation and furnished a service in the distribution of petroleum products unequalled in most places by allowing themselves a higher margin to cover distribution costs.

When other companies came in and the number of independent stations increased, attracted by a margin which was not high when the nature of the general territory was considered, cutting of retail gasoline prices started.

Then a surplus of light crude production developed in the Los Angeles basin fields. Independent refineries without their own distribution facilities sprang up, and conditions were made even easier for the independents to start in business and be assured of a source of gasoline, often at less than they could buy from the other oil companies.

THE accompanying article was written by V. B. Guthrie, managing editor of NATIONAL PETROLEUM NEWS, from a study of marketing conditions on a recent trip to California.

The impression has spread in some places that the method of operating stations under lease, which is now being widely carried on by the principal oil companies on the coast, is solely a means of meeting competition of the independent stations.

This is not the case. The oil companies say there are economies in this method of running stations which makes it doubtful if they will ever return to the direct operating of their stations. A special article by Mr. Guthrie to appear in the March 20 Modern Marketing Methods issue of NATIONAL PETROLEUM NEWS will go in detail into the leased method of operating gasoline stations.

Sunday Shut Down Finds No Mechanical Troubles in Resuming Production

By John Power
N. P. N. STAFF WRITER

TULSA, March 2

SHUTTING the pumping wells down on Sunday has passed the experimental stages successfully with enough operators to indicate that it is a success in regulating this type of production. On flowing wells, both as to such wells as are flowing their production naturally and those which are producing on the air/gas lift, the most ardent supporters of applying the Sunday shut-down to these wells are those which have done the most of it, Barnsdall Oil Co. and Prairie Oil & Gas Co.

These operators have shut down all their production of both types in the Seminole district for two consecutive Sundays, and in both instances the production has come back to normal with little or no difficulty. On the occasion of the last Sunday shut down Barnsdall Oil Co. reduced its production from 19,411 barrels for the 24-hour period prior to the shut down to 311 barrels during the shut down time. For the first 24 hours after starting up again, Barnsdall's production in the Seminole area was 19,195 barrels. The Prairie's experience matched Barnsdall's in every respect, production coming back to normal immediately.

Putting the shut down into effect is not complicated. On the pumping wells, the engines are simply turned off and allowed to stand. Water jackets are drained in cold weather, and care is taken that the circulating tanks have plenty of water in them in the event that the water lines should freeze up over the week end. On Monday mornings the pumping wells are started up, and so far, nearly all of them have gone serenely on their way, making their normal production in time for Tuesday morning's gage.

The problem of handling the air/gas lift wells is but little more complicated than that of the pumping wells. The pressure is simply turned off, and the compressors shut down. In some instances wells have continued to flow after the air had been turned off. They are not hindered in this, no gates being closed on any of the lead lines. At the plants one man is kept on duty all the time, being chosen in rotation from the whole crew.

The "air-jammer" which supplies the compressed air to start the compressor engines is kept running in order that on Monday morning there will be an adequate supply of air to "kick off" the compressors. A tiny leak in the air tank or air lines to the engines might extend the shut down time beyond the expected or desired limit. Auxiliary water pumps are kept running in cold weather to maintain water circulation and prevent the lines freezing up. With nothing going on around the plants, there is little or no fire hazard, although the man on duty and the usual fire extinguishers are an added precaution.

WHEN it comes to starting up again Monday morning the individualism of the average oil well comes into prominence, particularly a well which is flowing its production by any means at all. Some wells, usually those with comparatively low fluid levels, will kick off at anything from the working pressure on up. With the Barnsdall, the oil circulation method described on page 64 of this issue of NATIONAL PETROLEUM NEWS is used to start sluggish wells which otherwise might require extremely high pressures, or a long period of time, or both, to get them back on production. The Prairie apparently has few wells which give any great amount of trouble, with the exception of a few Simpson sand producers.

The Prairie, in starting up its flowing wells on Monday morning, put the pressure to the wells gradually. Many of the producers will break out on pressures which can be built up in the header, although there are many which have to be started up on the regular "kicker" line. Orders to the field men are to turn the pressure in gradually, and not to build up excessive pressures, which are extremely hard on the compressor equipment. A little more time given some of the more sluggish wells is well repaid in the lessening of the strain on the compressors. A table accompanies this article showing the break-out pressures and the length of time required to start some of the Prairie Oil & Gas Co.'s air lift wells in the Seminole area, listed by the Prairie under the general heading of the Maud district.

Prairie's Experience

Kick-off pressures and time required to start the wells of the Prairie Oil & Gas Co. producing in the Maud area after the Sunday shut down.

Lease	Well No.	Pressure (Pounds)	Time (Min.)
Chilcoat	3	300	15
Gibson	2	270	25
Gibson	4	240	10
Gibson	6	300	15
Harris	1	220	10
Harris	2	265	15
Harris	3	315	10
Harris	4	260	25
Sunny	1	300	60
Sunny	4	345	45
Sunny	5	170	Flowing naturally
Sunny	6	350	10
Sunny	7	220	60
Sunny	8	250	15
Talley	1	260	30
Talley	2	260	15
Talley	3	225	20
Desmond	3	720	90
Ellison	4	700	60
Gammon	1	430	45
Gammon	4	400	30
Gammon	6	450	20
Gammon	8	410	30
Wolfe		760	60

EXPERIMENTS by other companies joining in the Sunday shut down method of proration have been confined principally to pumping properties in the Seminole area. All of these companies have had sufficient success in bringing their production back to normal after starting up Monday morning that several of them are broadening their experiments to include some of the flowing wells. Engineers and production executives of such companies as the Tidal Oil Co., Mid-Continent Petroleum Corp., and the Indian Territory Illuminating Oil Co. have expressed themselves as well pleased with the Sunday shut down as far as they have carried it. It is probable that these companies, as well as other operators in the Seminole district, will extend the shut down to cover more and more of their properties.

The problem of individual wells is one which is attracting the attention of some observers of the Sunday shut down experiment. Amerada Petroleum Corp., for example, has several wells with which it experiences great difficulty if they are shut down for any length of time, no matter how

short. It is considered likely however, that this company, together with several others, will apply this method of proration to some of its wells, just how many to be determined by the actions of the wells themselves. As a method of regulating the production, the Sunday shut down plan, urged by NATIONAL PETROLEUM NEWS, is gaining in favor throughout the ranks of the producers.

Prairie Satisfied

TULSA, March 2.—After the figures were assembled on the performance of wells included in the Prairie Oil & Gas Co.'s second Sunday shut down, Dana H. Kelsey, vice president and general manager, told NATIONAL PETROLEUM NEWS that the company was well satisfied with this form of reducing production.

"Our experience in shutting down our producing properties, both in Seminole and Burbank the last two Sundays, is entirely satisfactory," Mr. Kelsey remarked in a telephone conversation. "We do not feel that we have injured our properties in the least, but, on the contrary, have accomplished the two results most desired, namely, the curtailment of production and the giving of nearly all of our regular men in those fields an opportunity to spend Sundays with their families, go to church, or use the time for rest and recreation.

"We recognize from an operating standpoint that the Sunday shut down program cannot be 100 per cent efficient, but we are 'sold' on the idea and are making an earnest effort to give it a thorough try-out, feeling that we all can learn much by the experiment; but of course, its success depends to a large extent upon its becoming a universal practice."

Barnsdall To Continue

Following is a letter from Robert F. MacArthur, vice president and general manager of the Barnsdall Oil Co., Tulsa:

My dear Mr. Smith:

Replying to your question as to whether Barnsdall will continue to shut down of a Sunday as its method of contributing to the plan of reducing production to equal consumption: We answer unequivocally, yes.

We undertook this only after careful consideration and experiment, with the result that a system was developed whereby a gas lift well can be broken out at normal working pressures in about an hour's time. All feared to undertake the Sunday shut down lest too much time and expense be consumed in regaining normal flow with gas lift wells. Having assured ourselves that these fears were groundless, we believe the shutting down of Sunday to be the most desirable method of retarding production.

True, the wells must be suitably connected to break them out by this low pressure system, but with the apparatus installed, the work is easily accomplished and quickly. Obviating the high gas pressures enables us to use gas compressors of larger volume at the same investment cost. Too, the lower pressures mean longer life to all apparatus used.

To those who not only believe in the principle of reducing production, but wish to practice it, we recommend the Sunday shut down. And if twenty-four hours will not bring about the necessary reduction, one might shut down at noon Saturday. If some of the men who now sit at desks will remember their experiences when they ran tour, the Sunday shut down might gain further adherents.

I would take this opportunity to thank you personally, and the NATIONAL PETROLEUM NEWS, for the good work done in furthering the general movement to reduce production to equal consumption of petroleum.

Very truly yours,
R. F. MacArthur.

Mr. Lawrence E. Smith,
NATIONAL PETROLEUM NEWS,
Tulsa, Okla.

* * *

77,000 Barrels Shut In Sunday, Mar. 3

(By Telegraph)

TULSA, March 4.—Continuing the Sunday shutdown method of regulating their production the same group of companies which shut down last Sunday clipped better than 77,000 barrels from the Seminole district's total production this week. As before Barnsdall Oil Co., and the Prairie Oil and Gas Co., were the leaders in the movement. These companies by shutting down completely for the 24 hours Sunday kept 47,000 barrels underground of the 77,000 not produced. The rest of the companies shutting down partially were the same as those which followed the plan a week ago.

In each instance the first experience of these operators with the Sunday shut down had been so satisfactory that additional wells were shut down with every indication that next week still more wells will be shut down by those now adhering to the plan and that also there will be several recruits added to the list of shutdowners production figures from the Seminole area as a whole indicated that about 15,000 barrels per day more oil is being produced than should be brought above ground and still conform to the proration percentages as announced by Umpire Collins. Those companies shutting down on Sunday are deducting the amount of oil not produced during this period from the total weekly allotment and prorating the rest of the week to keep their production to the desired limit.

May Investigate S.O. Indiana Fight

(By Telegraph)

WASHINGTON, D. C., March 5.—Senator Hubert D. Stephens of Mississippi, one of the quietest men ever in congress and never an indulger in the introduction of resolutions or speeches of the buncombe character, who introduced a resolution on March 2 directing the Federal Trade Commission to inquire into the Rockefellow-Stewart fight, had no hope of action when he offered the resolution of action but he wanted the Federal Trade Commission to have a reason for interesting itself in that fight. His thought is that there may be some ground for the reports that the Rockefeller move is as much intended to get a stronger hold on the Standard of Indiana for 26 Broadway, as it is to get rid of a man who, according to the Rockefeller view, has destroyed his usefulness by his participation in the Continental Trading deal and his course before the senate committee.

"I do not know either Rockefeller or Stewart and am not interested in their fight if it is a personal one" said Senator Stephens. "But if it means that the Standard interest centered in New York is trying to get control of the Standard of Indiana so as to prevent competition, then I am interested. The two companies are competing in Mississippi. I do not want that competition to disappear. I am not anxious to have the old Standard Trust re-established. The public is interested to prevent the concentration that once existed and which was broken up by the anti-trust suit."

The Mississippi senator gave out a statement in connection with his resolution indicating that some one well acquainted with the possibilities of concentration involved in the fight advised with him on the subject. It is suspected that the Federal Trade Commission found a way to the Mississippi senator's office. From that it is inferred that even if the resolution was not adopted in the dying hours of the congress that came to an end March 4, that body will inquire into the election that is to be held at Whiting, Ind., March 7.

Correction

A typographical error in the advertisement of the Texas-Mexican Oil & Refining Co., on page 12 of this issue, makes one portion read "—a patented refining process that puts a green cast color, similar to and easily salable as Mid-Continent," etc. This portion should read "—a patented refining process that puts a green cast color to and easily *as* salable as," etc.

Review of Late Production News

ANOTHER new peak in production was reached during the week ended March 2 when daily average output in the country reached 2,702,900 barrels, according to the American Petroleum Institute. This is an increase of 8,750 barrels over the previous week.

Total new crude supply was 2,919,900 barrels, a gain of 54,179 barrels over the previous week. Crude oil imports were at the rate of 217,000 barrels daily, a gain of 45,429 barrels over the week ended Feb. 23.

The largest change in any single field was in the Mission pool, in Oklahoma, which went up 11,850 barrels. St. Louis pool increased 5,200 barrels and Bowlegs 2,300 barrels.

Pecos county in west Texas gained 2,150 barrels and Winkler 3,400 barrels. Howard county fell off 2,300 barrels.

Salt Flat went up 2,650 barrels.

Oklahoma-Kansas

THE Seminole district's potential for the first half of March is 71,000 barrels more than it was for the last half of February. The new figure, as determined by an open flow test for the 24 hours ending 7 A.M. March 2, shows 483,713 barrels as the total potential. That a real effort has been made to reduce the area's production, both by the proration method, and by the Sunday shut down, is apparent after a consideration of the figures of the daily averages for the proration period just ended. Some 80,000 barrels per day has apparently been kept underground by the efforts of the conservationists.

Tentative proration percentages as announced by Umpire Ray M. Collins give the eight pools of the district a total allowed production of 399,621 barrels, a figure, which if adhered to, will keep Oklahoma's production to about 700,000 barrels daily average. The percentage reductions as now known call for a reduction in production of 24 per cent from the five original Seminole pools, 26 per cent in the St. Louis pool, and 30 per cent in the flush Maud and Mission fields.

A sharp drop in the daily production from the Indian Territory Illuminating Oil Co.-Foster Petroleum Corp. discovery well near Oklahoma City caused considerable comment among observers during the week. The decline, which amounted to about 1500 barrels in four days, brought the well's production down to 4099 barrels for the 24 hours ending the morning of March 2. Reports from the well are that it has quit flowing steadily, and that it is being agitated in an effort to bring it back to normal. None of wells now drilling in the area have reached the promising Layton sand, encountered in the discovery well at about 4950.

The Valley Center pool north of Wichita, Kansas, now has ten producers, making 7200 barrels per day. Buvibar et al. completed the No. 3 Lyons, an inside location, for 1400 barrels natural. Structurally, this is the highest well in the field, topping the pay at 3350 feet.

Texas, New Mexico, Louisiana

OPPOSITION registered at a meeting of the Winkler County Advisory Committee in Fort Worth resulted in decision not to recommend a decrease in allowable production of that west Texas field from 175,000 to 125,000 barrels daily. Although a majority of the operators favored the reduction plan proposed by Ed A. Landreth, committee chairman, and Reed Alsobrook, field umpire, Mr. Landreth announced after the meeting that enough opposition had been shown to make the plan unworkable.

An offset test to the Shipley discovery well in Ward county topped pay at 2473 feet and made heads of 30 barrels every five hours in an incompleted stage. The new well, No. 1 Hayzlett, in sec. 17, H&TC block 5, was drilled as a partnership test of Atlantic Oil Producing Co., and Delmar Oil Co., the last mentioned being the Texas subsidiary of Indian Territory Illuminating Oil Co.

In Lea county, New Mexico, the No. 1 Lockhart test of Marland Production Co., and the California Co., 31-21S-36E, is making 4,000,000 cubic feet of gas and about 180 barrels of oil daily at 3990 feet.

Nearly a dozen and a half tests are in the Edwards lime formation, ready to be completed, in the Salt Flats field, east of Luling, Caldwell county, central south Texas. They are expected to increase the field mark to a level between 35,000 and 40,000 barrels daily as compared with 28,460 barrels daily gaged on Feb. 28.

Louisiana operations for the week were of purely local interest.

California

SANTA FE SPRINGS held the interest of the industry today with the discovery of a still deeper sand by the Associated Oil Co.'s Clark No. 2.

The Buckbee zone had 11 new completions for a total of 33,500 barrels. The decline was about 30,400 barrels for the 97 wells of last week, giving an increase for the field of about 3000 barrels. There are 212 projects heading for zones below the Meyer. Of these 172 are drilling, 151 short of or in the Buckbee and Nordstrum, and 27 wells heading below the Buckbee into the O'Connell and Clarke zones.

The probable effect of the discovery of these new deep zones upon the output of the field will be known within a week or so.

Lawndale is still very doubtful, with many drillers suspending operations until more is known of the trend of the structure and the depth of the sands.

Kettleman Hills continues its fast drilling pace, with several new holes approaching the 2000 foot level.

No notable developments have been made at Carpenteria, Elwood or Inglewood.

Rocky Mountains

TWO wells were spudded in in the new Vineland district in Pueblo county, Colorado. These are the first tests to be started since the discovery, which is not yet completed and which will probably be indefinitely delayed by litigation.

In Lea county, New Mexico, the Marland Oil company completed another gas well in the southeastern part of the country; it is producing about fifty-five million cubic feet. In Eddy county the No. 1 Jackson of Flynn, Welch & Yates Oil company, which extended the field to the east, has increased its production since its completion by about fifty barrels.

Most of the interest in Wyoming is centered in and around the discovery oil well in the Billy Creek gas field, Johnson county. The well is not tested, but it is believed that it will produce at least 1000 barrels.

Wichita Is New Promotion Capital; Royalties the New Bait

WICHITA, Kans. March 2.

ONE who has followed the oil booms for some years has to rub his eyes and think hard to remember that he is in Wichita and not in the Wichita Falls of 1919 and 1920. For the old familiar trappings are here, fortune is lurking just around the corner and the public is besought in full page newspaper advertisements to get in on the good things that are offered by numerous syndicates, trustees and what not.

The game is a little different than it was in Burkburnett, Ranger, Smackover and other promotion Edens of recent years. There, it was capital stock of the companies that was being peddled, the blow-up finally coming when the federal authorities interfered and added to the population of the Atlanta and Leavenworth prisons.

In Wichita, the offerings are microscopic fractions of the one-eighth royalty. A California note was introduced into the proceedings by the Petroleum Investment Corp., which has an office on the ground floor near Wichita's principal hotel. This concern operates a "de luxe, heated bus," to use its expression, in which the customers are given free trips through the field north of Wichita.

The royalty business has reached large proportions and, by opening their columns to the flamboyant advertisements prepared by the promoters, the Wichita newspapers have done their helpful bit in keeping up the good work. Not much corrective work has been done. One or two of the banks published advertisements containing words of caution, in general terms, and the chamber of commerce raised its voice just a little. The Kansas blue sky commission tried to keep track of the affair and made a few passes at investigation, but the law is pronounced by attorneys to be of such feebleness that the commission has little latitude.

A word about the attitude of the newspapers: The Evening Eagle, owned by the Murdock family—Victor was one time a member of the Federal Trade Commission, the authority on fair practices in industry—burned NATIONAL PETROLEUM NEWS to a crisp recently in retaliation for an editorial which criticized the promotion and the "civic spirit" attitude and suggested that oil affairs had best be left to the oil companies. The Evening Eagle took part of the front page to suggest that the big companies and the big operators are on the alert to put something over on the citizenry and but for the newspapers would succeed in their devilish designs. It said:

"It would be fine, fine for the BIG oil men were the newspapers to maintain dumb silence about new wells, big wells, shows and such. The oil men could then slip in and grab off leases and royalties for a fractional part of their worth. After they milked the field they would buy homes in Honolulu or some South Sea resort and laze away their days in idleness and grin at how they worked their rackets upon the landowners, upon Wichita and Wichita's newspapers."

THIS defender of the public then says that it will be the people of Wichita who will make the money out of the "gushers" in that vicinity and not the "fly-by-nights," as it characterizes the BIG oil men. (Such transients in the business as the Gypsy, Marland, Shell, Empire, Skelly, etc., are heavily interested in the Sedgwick county development.)

Whether this paper was being subtly funny or just guilty of bum make-up is uncertain, but immediately underneath the soul-searing editorial on NATIONAL PETROLEUM NEWS and the BIG oil companies was this delicious bit:

"—I have been talking to—
—Robert C. Foulston—
—About Blue Sky—

"He had been before the Blue Sky Board at Topeka to get permits for oil syndicates and was cheerful about the outlook.

"Without doubt the properties Foulston represented are worthy and permits should be issued for Bob is not the kind of a citizen who would get behind a shady deal. But the Blue Sky board! It is made up of gentlemen and scholars but not scholars in respect to oil properties. Probably one member of the board knows an oil well from a duster. One or two may know a walking beam from a headache post. One or two have studied oil field production statistics. A permit to float an oil deal from the Kansas blue sky board is, in truth if not in law, about as valuable as a Bachelor of Arts degree issued by the Amalgamated Meat Cutters Union No. Steventytrio. Knowledge back of such permits in truth comes from blue sky."

Thus, the Eagle neatly notifies the public that the mere failure of a promoter to qualify under the blue sky law should not bar him from participation in the great Sedgwick county rainbow chasing expedition.

Here is a sample of the hot dickety promotions featured in Wichita. The Wichita Eagle, of Feb. 1, published a full page ad for the Z. N. Dunlap Royalty Syndicate, with the following expert piece of supposing:

"Carl H. Tangenman Royalty. This royalty consists of 240 acres located in the heart of the Empire Company's drilling block north of Newton. This block is located in R 1 E township 22 south. The Empire company is drilling at the present time on our royalty. . . . . According to the terms we are to receive 1-64 of the total of all oil and gas produced. The number of possible locations if production materializes will be 24. In case the Tangenman No. 1 locates two sands, there would be 48 possible locations. . . . . If we should strike a thousand barrel well with 24 locations, this would give us 24,000 barrels of oil per day. Of this amount, the syndicate would receive approximately 375 barrels per day, from this 240-acre tract.

"Suppose that oil was found on the Tangenman block. Tangenman 24 location, 1000-barrel wells total of 24,000 barrels or 375 barrels per day to the syndicate at $1.70 per, this total $637.50 per day or $232,687.50 per year. This one royalty would return many times your money invested. Sharpen your pencil and figure out what could be made if all of our property should produce."

OTHER blocks in which this outfit has interest are subjected to similar computations. On this sort of stuff, the Dunlap syndicate was offering 1300 units at $50 each.

At the moment, the man who is making the biggest noise is J. A. Jenkins, who says in his advertising that he wants $200,000 from the public with full authority to handle it the way he wants to—a sort of one-man investment trust. He will close his proposition when he gets the $200,000, but if he sees something that he thinks should be bought before he gets the full amount, he assumes the right to buy it. However, the folks who haven't subscribed but do later on will not share in the fruits of the investments made prior to the closing of the pool.

The blessing on the whole lay-out of overcapitalized royalty dodges was pronounced in the Feb. 9 issue of the Wichita Eagle when it editorially dissipated the foolish overproduction

talk that is going the rounds. Said this journal:

"Petroleum men's big concern is to conserve the oil that they find and turn it into the storage tanks with a minimum of waste. It will be in demand. And Wichita will continue to believe that its present flush production with promise of more is a benefaction and not a ruinous threat to a world industry.

Walter M. Dunham Dead At Dallas Hospital

HOUSTON, March 1.—The death of Walter M. Dunham, in a Dallas hospital, Feb. 26, removed from the petroleum industry one of its familiar figures since Pennsylvania development days. Mr. Dunham, who was 75 years old, had been identified with the industry in some manner or other since he was 15 years old.

In his early life Mr. Dunham served as a driller in eastern and California fields for more than 30 years. Afterward, he entered broader phases of the industry and was widely known for his ability as an appraiser of oil lands, both in this country and abroad. He was known as a statistical "shark," in which work he was aided by an amazing memory coupled with fidelity to detail.

Mr. Dunham was a native of Chatham, Ontario, but his youth was spent in the Appalachian oil fields. His family moved to Oil City, Pa., when he was about four years old. Later, he traveled to most of the oil territory of the world, in the last six or eight years making periodical trips to South America. He returned to this country from Brazil about a year ago.

TULSA, March 2.—J. F. Nagle, who was granted a leave of absence from the Skelly Oil Co. about five months ago so he could build up a sales organization for the Spartan Aircraft Corp., has returned to his duties as sales manager for the natural gasoline division of the company.

Profit Gains Shown by Four Standard Pipe Lines

CLEVELAND, March 4

ONLY four pipe line companies of the Standard Oil group of nine that have published reports on their 1928 operations, show larger net profits in 1928 than in 1927. These four are the Buckeye, Eureka, Northern and Prairie lines.

The best showing was by the Prairie which profited from increased movement of crude oil from the Mid-Continent to interior refiners and to Gulf terminals. The Northern's gain came largely from the sale of securities in connection with its reduction in capital stock. Points brought out in annual reports were, briefly:

Buckeye Pipe Line Co.

Truck line barrelage in 1928 increased approximately 4 per cent over 1927 barrelage. Runs from wells also increased about 4 per cent. Deliveries decreased to some points and increased to others. No business was handled for Atlantic seaboard plants.

Eureka Pipe Line Co.

New higher gathering charge was effective last year. Short extension of line run to Cabin Creek where a small volume of Mid-Continent crude oil is being delivered to the Pure Oil Co.

Indiana Pipe Line Co.

Barrelage in 1928 was less than 0.75 per cent more than in 1927. Volume of oil delivered to some interior points substantially increased but to other interior points and Atlantic seaboard plants has decreased. No oil for the Atlantic coast was handled last year.

New York Transit Co.

Company handled 2,233,246 barrels of crude in 1928, an increase of 2.33 per cent over the 2,182,520 barrels handled in 1927. Gathering system gathered 294,153 barrels of Pennsylvania grade crude in New York last year as compared with 269,040 barrels in 1927. The gain in 1928 was 25,113 barrels or 9.33 per cent.

No crude for delivery to Atlantic seaboard plants was handled. The line running from Olean, N. Y., to tide water at Sparkill, N. Y., has been sold to the Columbia Gas & Electric Corp. for $1,404,180. Properties in New Jersey are under contract of sale for $319,047.50. D. S. Bushnell, president of the company, said directors would be in position to recommend a reduction in capital stock when the sales are completed, and a distribution of proceeds would be possible.

Northern Pipe Line Co.

Company handled 5,607,349 barrels of oil last year, a decline of 0.22 per cent from the 5,619,522 barrels transported in 1927. Pennsylvania, Mid-Continent and Winkler, Texas, crudes were moved, the last named grade from the Atlantic seaboard to Franklin, Pa. No oil was moved eastward to Atlantic coast plants.

Southern Pipe Line Co.

No oil has been shipped to Philadelphia through this line since July, 1923. A 45-mile section at the eastern end has been sold to the Pure Oil Pipe Line Co. and some oil is being moved through it. The long part of it westward from Millway, Pa., is idle and some use is being sought for it.

Prairie Pipe Line Co.

Crude deliveries in 1928 totaled 66,549,620 barrels, a gain of 3.1 per cent over 1927 deliveries and a new record for the company.

Summary of Earnings and Financial Reports of Nine Pipe Lines

Balance Sheet Items as of Dec. 31

Company	Stock Par	Year	Net Profits	Net Per Share	Fixed Assets After Deprec.	Deprec. Reserve	Other Investments	Current Assets	Current Liabilities	Working Capital	Capital Stock	Surplus
Buckeye	$50	1928	$1,207,029	$6.03	$9,381,726	$11,346,202	$3,821,074	$932,163	$797,727	$134,436	$10,000,000	$3,026,783
do	50	1927	981,036	4.90	9,104,035	10,797,932	4,791,770	1,469,615	327,297	1,142,318	10,000,000	3,169,754
Cumberland	50	1928	102,134	3.40	1,351,633	3,280,097	1,110,681	618,689	286,772	331,917	1,500,000	1,294,231
do	100	1927	213,184	7.10	1,555,651	3,119,113	1,810,354	433,233	222,701	210,532	3,000,000	576,537
Eureka	100	1928	64,726	1.29	4,830,258	6,593,956	2,222,614	581,612	351,643	249,969	5,000,000	2,282,840
do	100	1927	4,602	.09	5,234,071	6,219,711	1,905,269	578,332	299,557	278,775	5,000,000	2,418,115
Indiana	50	1928	849,112	8.49	2,377,380	2,791,180	3,169,468	622,440	486,165	136,275	5,000,000	593,245
do	50	1927	985,468	9.85	2,463,238	2,678,669	4,170,077	687,252	396,399	290,853	5,000,000	1,044,133
New York	100	1928	1,549,413(d)	....	787,798	1,924,207	1,884,122	1,636,407	142,845	1,493,562	5,000,000	(d)835,773
do	100	1927	69,433(d)	....	3,880,739	2,301,228	2,751,671	201,227	87,077	114,150	5,000,000	1,274,140
Northern(c)	50	1928	399,632	9.99	1,231,188	1,926,892	831,177	324,476	143,059	29,914	2,000,000	211,525
do	100	1927	339,140	8.47	1,257,005	1,838,376	3,358,030	286,013	256,099	181,417	4,000,000	203,913
Prairie(a)	100	1928	19,786,613	24.42	67,461,323	38,323,589	.....	69,140,462	418,695	69,721,767	81,000,000	52,762,962
do (b)	100	1927	18,327,712	22.62	62,110,809	33,857,700	7,703,807	58,397,265	2,392,750	56,004,515	81,000,000	42,271,858
Southern(c)	10	1928	1,443(d)	....	2,508,199	2,910,026	1,192,144	170,300	14,982	155,318	1,000,000	274,579
do	50	1927	222,003	2.22	2,937,380	3,014,469	2,281,577	259,153	723	258,430	5,000,000	454,951
Southwest Pa.(c)	50	1928	307,634	8.79	1,935,727	2,101,016	1,495,917	282,903	209,516	73,387	1,750,000	387,521
do	100	1927	362,289	10.35	2,101,797	2,352,900	1,898,235	232,108	92,253	139,855	3,500,000	639,887

(a) Previous to 5 for 1 stock split; 1928 earnings equivalent to $4.88 a share on present $25 stock.
(b) Exclusive of Pure Oil Pipe Line Co. which is included in 1928 report.
(c) These reduction accounts are carried as liabilities: Northern $11,763; Southern $2,581,082, and South West Pennsylvania $1,367,507.
(d) Deficit.

Court Refuses New York Tank Injunction

CLEVELAND, March 4.—Judge Aaron J. Levy of the Supreme Court of New York county, New York, has refused a permanent injunction restraining the Fire Commissioner of New York City from approving gasoline truck tanks with protruding heads for transportation of gasoline through the streets of New York and has also refused to mandamus the Fire Commissioner to approve the tank manufactured by the Smith-Hamburg-Scott Welding Co., Long Island City. A temporary injunction was vacated.

Judge Levy, in his opinion, said the Fire Commissioner disclaimed knowledge of whether the protruding head was patented and pointed to conflicting opinions of patent attorneys about that contention. He said it had not been shown that the New York specifications called for a patented device.

The Smith-Hamburg-Scott company had charged that the New York truck tank specifications amounted to a monopoly in that they were drawn about a patented product, a tank with protruding compartment heads.

The Smith-Hamburg-Scott company is expected to appeal the case.

The Davis Welding & Mfg. Co., Cincinnati, which was a party defendant in the case, expects action now on its plans for a tank with protruding heads, blueprints of which have been passed by an inspector of the New York Board of Hazardous Trades, said Augustine Davis, Jr., president of that company. If the plans are passed by the board the Davis tank will have to submit to various tests, chief of which is a drop test, before it will be considered for approval by the Fire Commissioner.

(Editor's Note—Hearing of this action came some days earlier than had been expected. A story on page 94 of this issue was written on information gathered a week ago when it was believed by the plaintiff in the suit that the hearing would not be held until later this month.)

Seminole Proration Made Tighter

(By Telegraph)

TULSA, March 4.—Proration percentages as first announced by Umpire Ray Collins have been increased to read as follows. Twenty-five per cent reduction in the original five pools of the Seminole group. Twenty-seven per cent reduction in the St. Louis pool and thirty-one per cent in the Maud and Mission pools. On the new potentials in effect for the first half of March this will give the general area an allowed production or less than 400,000 barrels.

State Committees to Help Put Code Into Effect

NEW YORK, March 4

FURTHER steps to allow the oil marketing industry of the entire country to become familiar with the code of marketing practices sponsored by the American Petroleum Institute are being taken by that organization.

First, each of the six regional subcommittees which shared in drawing up the code are to appoint sub-committees by states which are to function to inform oil marketers concerning the code and to bring the oil companies to cooperate in making the code effective when it has been approved by the Federal Trade Commission. There will be one such subcommittee for each state.

The regional sub-committees are; for Texas, south Arkansas and Louisiana, Roy B. Jones, president Panhandle Producing & Refining Co., Wichita Falls, chairman; for the east, R. C. Holmes, president, The Texas Co., New York, chairman; for the middle west, Henry M. Dawes, president Pure Oil Co., Chicago, chairman; for the Mid-Continent, P. M. Miskell, vice-president Empire Oil & Refining Co., Tulsa, chairman; for Rocky Mountain territory, E. T. Wilson, chairman of the board, Continental Oil Co., Denver, chairman; for the Pacific Coast, K. R. Kingsbury, president, Standard Oil Co. of California, chairman.

Second, the institute has started to set up a committee to interpret and analyze the code, as now drawn, and to show how the provisions of its clauses which have been the subject of controversy should be applied in actual commercial transactions. H. T. Klein, general counsel for The Texas Co., is chairman of this new committee. W. R. Boyd, Jr., executive vice-president of the institute, is also a member and three other members are to be appointed. This committee will also serve to answer questions coming from the industry as to how the code is to be applied.

Latest information from the Federal Trade Commission at Washington is that it will be about a month yet before that body announces its formal approval of the code. According to Mr. Boyd the oil marketing companies over the country will be asked to put the code into effect in their own operations on a certain date.

Index to Coming Meetings

Michigan Oil Men's Association, Statler Hotel, Detroit, March 7, 8.

Southeastern Ohio Oil & Gas Producers Association, Easterling Club House, Logan, O., March 8.

Western Petroleum Refiners Association, Jefferson Hotel, St. Louis, Mo., March 12.

Wisconsin Petroleum Association: Schroeder Hotel, Milwaukee, March 13 and Apr. 10; Beaumont Hotel, Green Bay, May 15.

Conference of Refiners, called by *American Petroleum Institute* to consider changes in government gasoline specifications, Willard Hotel, Washington, D. C., March 15.

American Association of Petroleum Geologists, Fort Worth, March 21, 22, 23.

Independent Oil Men of America, Chicago, March 25, 26.

Independent Oil Men's Association, Stevens Hotel, Chicago, March 25, 26.

American Petroleum Institute division of Development and Production Engineering, Texas-Louisiana-Arkansas division Baker Hotel, Dallas, Tex., Apr. 3, 4.

Minnesota Petroleum Association, Radisson Hotel, Minneapolis, Apr. 3, 4.

American Oil Burner Association, Hotel Pennsylvania, New York City, Apr. 9, 10, 11.

National Petroleum Association, Riverside Hotel, Cambridge Springs, Pa., Apr. 25, 26.

Mid-Continent Oil Scouts' and Land Men's Association, Wichita, Kan., Apr. 26, 27.

American Gas Association, Natural Gas Dept., Kansas City, Mo., week of May 6.

Virginia Independent Oil Men's Association, Murphy Hotel, Richmond, Va., May 15, 16.

National Oil Scouts Association of America, Fort Worth, Tex., May 20, 21.

Natural Gasoline Association of America, Mayo Hotel, Tulsa, May 20, 21, 22.

Independent Oil Men of America, Stevens Hotel, Chicago, Oct. 21, 22, 23.

Whether you prefer the *Stuffing Box* ABOVE *or* BELOW the Valve—

Type A
Truck Tank Faucet

If you prefer the stuffing box *above* the valve, Type A should be your choice. For fifteen years Type A has served the oil industry—and for fifteen years Type A has steadfastly maintained its reputation for *flawless performance.* Today, with many of the finest oil companies in the United States, it is *standard equipment!* The transparent view at the left shows the internal structure, and how it operates. Like all Wheaton Faucets, Type A is *self-closing*—the operator must *hold* the valve open, as it closes the instant the wrench is released.

the best of either type of faucet is a WHEATON

Type 24
Truck Tank Faucet

If you prefer the stuffing box *below* the valve, Type 24 is the finest faucet your money can buy. It is *counterbalanced*—and that *assures* slow, smooth, easy action. The transparent view at the right shows the internal structure of this faucet. When the valve closes—as the plunger goes down—the chamber above the counterbalance flange must fill, and to do so the liquid must pass between the close-fitting flange and the chamber wall. The slow, gentle closing action of Type 24 relieves both the faucet and the connections of all vibrations and shocks.

DO you prefer the stuffing box *above* or *below* the valve? That alone determines your choice between these two Wheaton Faucets. In either case, you are certain of securing *the finest faucet of its type ever built.* And, whether you choose Type A or Type 24, depending on your preference of design, you will be selecting a faucet that is typically *Wheaton* in design—Wheaton in material and craftsmanship, too. And that means a faucet that is made of special-analysis bronze, which neither crystallizes nor corrodes; a faucet built to designs drawn from years of experience and study; a faucet, finally, which has that precise *fit* and perfect *finish* which are found in all Wheaton products.

We will gladly send you a sample of either or both of these two Wheaton Faucets for a 30 or 60 days' trial. If it does not prove entirely satisfactory, you may return it for credit or refund.

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FAUCETS • VALVES • JOINTS • COUPLINGS • FILLERS • NOZZLES • FITTINGS

The Mid-Continent Skyline

By Lawrence E. Smith

Tulsa

SPRING seems to be just around the corner. The Mid-Continent has had, for it, a severe winter with some weather as low as zero. Everybody was unhappy, except those hardy persons lately arrived from climes where the knitted wristlet and the ear tab are standard articles of dress.

There is again a steady flow of oil persons wearing short panties toward the several golf courses and a more cheerful spirit pervades the land. Our burghers are shopping for onion sets and rose bushes and the big spring planting is about to commence. Hurrah for Spring!

* * *

By the time these words reach the reader, if any, the inaugural ceremonies will have been conducted in Washington and the onlookers will have been treated to the sight of an Indian band from Oklahoma which went up for the purpose of blowing into cornets and such like. On this question, we should like to be heard.

Thousands of people in the east believe that Oklahoma consists of Indians standing on rock cliffs, peering toward the sun with one hand shading the eyes, the while a war bonnet consisting of the plumage of luckless fowl adds to the romance of the occasion. This impression is fostered by the tiresome pictures which are forever appearing in newspapers showing Chief Spitting-Against-the-Wind and his henchmen in the act of calling on the president, looking at the chief justice or doing some other decorative thing.

The fact is that here in Oklahoma we don't see as much of the be-feathered type of Indian as they do in Washington. They are not on parade here. Quite a few of them live in Tulsa, but they have plumbing in their houses, play golf and drive cars. Few of them could stay on a war pony for any appreciable time. An Indian we know bought his little boy a standard small boy's Indian suit last week and he finds it quite a novelty. He has not seen the real article. The writer was compelled to drive 40 miles some months ago to please a guest from Berlin who insisted upon seeing some Indians in their native lair. Luckily, we remembered the location of an Osage village and were able to produce. Most of the boys were having a rousing game of croquet when we drove up.

The Tulsa chamber of commerce last week decided to invite several nationally known writers, including O. O. McIntyre, Arthur Brisbane, and more like that, because one of the writing brothers had referred to Tulsa as a cow town where the chief excitement occurred on the days when the cowboys were paid off. Yet, the very impression Tulsans seek to remove is studiously nourished by featuring these everlasting delegations of Indians, clad in red union suits and daubed with paint bought at Woolworth's store. We have nothing against the Indians, understand—we have some very good friends among them—but they long ago ceased to be romantic out here, if they ever were, and they have no true value in advertising the state. A worthier addition to the inaugural ceremonies than the Indian band could have been found. That boy at Shawnee who won the junior corn-growing championship of the state, for instance.

* * *

E. H. Salrin has been elected president of the Tidal Oil Co. and the Tidal Osage Oil Co., both subsidiaries of the Tide Water Oil Co. He succeeds M. P. Williams, who will give all his time to the Associated Producers Co., producing subsidiary of Tide Water, which operates in Illinois, Kentucky and Pennsylvania. Mr. Williams continues in the Tidal companies as vice-president and director.

Ed Salrin

Newly elected president of the Tidal Oil Co. and the Tidal-Osage Oil Co.

Mr. Salrin has lived in Oklahoma for 15 years. He was one time with the Laurel Oil & Gas Co. For the past three years he has been in charge of the Tidal's land department here, being a vice-president of the company. The customary expression "well known" applies with more than customary weight in his case.

* * *

The best story we have heard recently—if you have heard it never mind stopping me—concerns two leasers and a farmer. One of the agents represented a Standard company, the other an independent. They haggled with the farmer for several days, being played off by him against each other. Finally the independent got the lease for the same amount the Standard man had offered and the latter had offered it first. The loser asked the farmer why he had discriminated in that fashion.

"Well," said the farmer, "that other fellow asked what you had offered and I told him. He said he would give the same amount and I said you had made the first offer. Then he said, 'Do you know that that fellow works for the Standard?' and I said I didn't see what difference that made. Then he asked me whether I had heard that Judge Landis fined the Standard twenty-nine million dollars once. I said I had and then he asked whether I had ever heard of it being paid. I had to admit I never read that they paid it.

"So he said to me, 'If the government of the United States couldn't make the Standard pay a fine, what chance have you got of gettin' your rentals out of them.' It looked like he might be about right and that's why I leased to him."

* * *

Okmulgee, who has lost several oil companies to Tulsa in the past three years, now loses the McCulloch Oil & Gas Co., headed by J. W. Mc-

Culloch, familiar figure in the Mid-Continent producing industry and one of the organizers of the Independent Oil & Gas Co. The Houston Oil Co. of Texas also is moving its Okmulgee offices to Tulsa.

* * *

Jack B. Kennedy, geologist, is opening offices in Oklahoma City, having resigned from the Texas Pacific Coal & Oil Co., and will engage in leasing and operating. He has had charge of the land and geological department of the T. P.'s Oklahoma division for several years.

* * *

Dr. W. P. Hasemen, one-time head of the research department of the Marland Oil Co., has become associated with a group of royalty companies organized in Oklahoma City by Irving Perrine, geologist. Dr. Hasemen has made a thorough study of geophysical methods and has contributed importantly to their adoption by oil companies. He has been doing consulting work since resigning from the Marland companies last summer.

* * *

Funeral services for J. J. Brazill, superintendent of steel storage for the Prairie Oil & Gas Co., were held Feb. 27, in Tulsa. He suffered a heart attack a few days before his death. Mr. Brazill saw service with the South Penn Oil Co. years ago, with the Oil City Fuel Supply Co. and the Ohio Oil Co. He came to the Mid-Continent field in 1907 and was continuously with the Prairie since that year. He was 60 years old. His widow and three daughters survive him.

* * *

T. T. Eason, president of the Bolene Refining Co., Enid, Okla., announces the consolidation of that company with the Eason Oil Co., which operates bulk and filling stations in western Oklahoma. V. E. Bolene's interest in the refining company was acquired by Mr. Eason. The latter is also president of the Healdton Oil & Gas Co. and the Oil State Petroleum Co. The Bolene company operates a 5000-barrel skimming and 2500-barrel cracking plant with pipe line to the Garber and Tonkawa fields.

* * *

Died: Calvin J. Vance, scout for the Marland Production Co., in Ponca City. He was 28 years old. Burial was in Shreveport.

* * *

W. L. Kistler, president of the Kistler Petroleum Co., Tulsa, is opening a branch office in Oklahoma City and closing one in Fort Worth.

* * *

Oklahoma Pipe Line Co.'s Seminole district offices are being moved from Holdenville to Wewoka. The latter point is several miles nearer to the principal fields.

River Bed Bill Is Vetoed

HOUSTON, March 2.—An opinion of the attorney general's department, holding the measure unconstitutional, stood back of Governor Moody's veto, March 1, of the river bed title validation bill passed by the present legislature. The bill sought to give relief from attacks on titles to oil lands and prospective oil lands, mainly in west Texas, where the navigable stream law had been invoked against surface owners.

In saying that an unconstitutional attempt to correct a defect is no better than no attempt, Governor Moody pointed out how the relief the actual land owner wants may be obtained:

"(1)—By submission of a constitutional amendment. If there is any suggestion of the state not showing good faith with the persons with whom it has had transactions then every citizen of the state would be ready to redeem the faith of Texas by the enactment of whatever amendment would be necessary.

"(2)—By the enactment of a statute withdrawing from sale whatever title the state may have in navigable streams and the passage of another statute giving the persons owning surveys which cross such streams a preference right to buy whatever title the state may have for sale.

"(3)—A statute defining the legal terms "navigable stream,' but it is hardly believable that such a statute could be retroactive for it would be subject to the same objections as the bill herewith returned."

An attempt will be made to pass the present bill over the governor's veto, Charles L. Black and Charles A. Wilcox, Austin attorneys, having collaborated in an opinion in direct variance with the views of the attorney general's department.

Salt Flats Pipeline to Be Built by Humble

HOUSTON, March 1.—The Humble Pipeline Co., subsidiary of Humble Oil & Refining Co., will go ahead promptly with plans for construction of an 8-inch, 128-mile outlet serving the Salt Flats field, east of Luling, in Caldwell county, central south Texas. The line will be built from the field to existing facilities of the Humble at West Columbia, in Gulf Coastal salt dome territory.

The new pipeline is being built primarily to serve the Humble's own production, which now averages about 8000 barrels daily, at Salt Flats. Daily average production of all companies in the field approximates 30,000 barrels from nearly 90 wells. Gulf Production Co. and the Shell Oil Corp., both of which handle their crude in tank car shipments, are the field's other principal operators. Together, the three companies control about 75 per cent of present production.

Magnolia Petroleum Co., which is buying oil from smaller operators, has the only present pipeline outlet from the field.

A total of 17 wells drilled into the Edwards lime producing horizon and almost ready for completion may increase the field average quickly to between 35,000 and 40,000 barrels daily.

Publishes Book on Oil Royalties

TULSA, Feb. 28.—"Oil Royalties," by Edwin I. Reeser, of Tulsa, is a worth while book, not only for the general information it contains on the various branches of the industry, but for the words of caution on the purchase of royalties. The author is himself in the royalty business and has witnessed its growth to the point where, in the Mid-Continent, it appears at times to eclipse the producing business itself.

Mr. Reeser, who is a son of E. B. Reeser, president of the Barnsdall Corp. and of the American Petroleum Institute, develops his book in narrative form, beginning with the history of the industry. His writing style is clear and at all times interesting. He goes into the methods of drilling, of geological work and of producing. He explains the conservation work being done by the industry today.

As to the purchase of royalties, there are many hazards and the author states them frankly. Over-capitalization of a royalty interest to the extent that it would never, on the laws of averages, return the investment, is a practice that has been notorious in recent years. Mr. Reeser's admonitions are worth the study of all prospective royalty investors. The book is published by the Dexter Publishing Co., Tulsa.

New Murray Branch Store

TULSA, Feb. 28.—The Murray Tool & Supply Co. has opened a branch at Oklahoma City in Capitol Hill at 23rd St. The company previously has had branches at Tulsa, Ponca City, Pawhuska, Seminole, Webb City, Weleetka, Yale and Maud, Okla., and at Wink, Texas. General offices are at Cleveland, Okla.

Open Flow Test Shows Real Effort Made To Reduce Seminole Production

By John Power
N. P. N. STAFF WRITER

TULSA, March 2

THE continued high daily production from the Seminole district, and a sudden drop in the output of the Indian Territory Illuminating Oil Co.-Foster Petroleum Corp. discovery well near Oklahoma City featured the field news during the past week.

A comparison of the open flow total production in the Seminole district for the 24 hours ending 7 A.M. March 2 with the total produced in the district for the preceding 24 hours, under the proration plan, showed that the operators had been endeavoring to meet the situation, and to curb the flood of oil which again threatens to swamp the industry.

According to the 24-hour open flow test by which the proration percentages for the next 15 days are to be determined, the general Seminole district is capable of making a total daily production of 483,713 barrels from 1,755 wells. This is an appreciable increase over the district's potential as determined Feb. 14, just prior to the start of proration, at which time the total was 412,830 barrels from 1,671 wells. The day after this amount was recorded, proration began, and the Mission pool, long held off the market, was thrown open. New wells in the Maud area, in the western half of twp. 8-5, together with the Mission pool, have increased the district's capabilities by some 71,000 barrels per day. The Mission pool, with 71 wells now on production, contributed about 44,000 barrels of this, or some 62 per cent. The rest of the increase of the potential is fairly evenly divided among the other major fields of the area. The extreme cold weather which prevailed during the first open flow test —five days actual production—which determined the potential for the last half of February was doubtless responsible for much of the general increase. Seminole district production by pools for Feb. 14, the last day of the first open flow test, March 1, the last day of proration and for March 2, the new potential or open flow test, is shown in an accompanying table.

From these figures it is apparent that serious efforts are being made to curb the production. Especially is this true when it is taken into consideration that more than 11,000 barrels daily average was taken off in a lump on Feb. 24 by the Sunday shut-down method of regulating production. The gage on the territory for last Monday morning showed 79,000 barrels under what it had been for the previous 24 hours. This reduction was brought about by the Sunday shut-down, and the daily average of this figure is therefore applicable as a further reduction in the district's daily figures for those days other than Sunday.

In round figures, then, production from the general Seminole area was held back at the rate of about 80,000 barrels per day, roughly 17 per cent. If it is desired to hold Oklahoma's crude oil output to 650,000 barrels per day, still further reduction will be necessary in the Seminole area, which so far has borne the brunt of all restrictive movements. Based on the new figures for the potential production to be used during the first half of March, Umpire Ray M. Collins has announced tentative proration percentages. For the original five Seminole pools, production is to be prorated 24 per cent. In the St. Louis area, it is to be prorated 26 per cent, and in the flush Maud and Mission pools it is to be prorated 30 per cent. Those operators going the second proration period with more than their share of oil produced during the first period, will be required to make up this overage during the first half of March. Those whose records show that their leases produced less than their alloted share will not be allowed credit for the shortage unless they can show that it was directly due to proration that they were short, and not because their properties could not make the alloted amount. As their share in the curtailment, drilling wells reaching the pay during this period of proration will be required to shut down for eight days before drilling in.

On the basis of the umpire's tentative deductions, production from the Seminole pools during the first half of March should run fairly close to the following figures.

	Barrels
Little River	88,481
Bowlegs	38,880
Earlsboro	58,995
Seminole	36,424
Searight	10.018
Maud	27,279
Mission	31,229
St. Louis	108,315
	399,621

Statements showing the amount of oil each produced during the last half of February are now being sent to the umpire by the companies. It will be several days before he completes his check of the faithfulness with which the operators adhered to their allotments of production. The Mission pool, of course, threw the general figures out of line, coming in during the proration period with upward of 70 new wells.

THE drop in the daily production from the Indian Territory Illuminating Oil Co.-Foster Petroleum Corp. wildcat near Oklahoma City is the cause of some concern to the operators. The decline has amounted to about 1500 barrels over the past four days, dropping from better than 5500 barrels to 4099 barrels for the morning of March 2. The gas volumes and pressures have declined, as has the back pressure, the latter dropping from 80 pounds to 20 pounds. Reports are that the well has ceased to flow steadily, and that it is being agitated to restore it to its former vigor and health. If the opinion of many is correct that the pay in this remarkable well is the Hunton

Comparison of Seminole Fields Under Proration

Field	Production Wells	Production Feb. 14	Production March 1	Production Wells	Production March 2
Little River	326	93,019	81,662	326	102,885
Bowlegs	311	40,681	38,741	310	45,209
Earlsboro	298	65.576	60,571	303	68,599
Seminole	280	39,315	32,806	281	42,840
Searight	69	9,013	9,895	70	11,649
Maud	64	40,624	36,326	85	38,971
Mission	16	782	47,112	71	44,613
St. Louis	307	123,820	108,004	309	128,947
Grand total	1,671	412,830	415,124	1,755	483,713

lime, this drop is not surprising, for Hunton production generally goes down in as spectacular fashion as it starts off.

The decline has not affected the pep of the operators drilling in the neighborhood of the I.T.I.O.-Foster strike, as wells are still busily drilling ahead. None of them have reached the 5000-foot sand as yet, although two or three are not more than a few hundred feet from it. Should this deeper pay from which the discovery has produced so far prove less satisfactory in subsequent wells, it is the opinion of many that this less deep sand, (it is hardly respectful to refer to a 5000-foot sand as the shallow sand) may prove productive in a big way. Those who have followed the history of the discovery well will recall that it encountered a sand, presumably the Layton, at about 4950 feet, and that it showed, when cored, a thickness of 100 feet, carrying 30 million feet of gas, and in addition, a complete oil saturation. The next few weeks will do much to give the industry a line on the possibilities of the Oklahoma City area.

THERE is a possibility that the Mission pool, newest member of the Seminole family, has come, and gone. The field now boasts 71 wells, whose combined output reached a peak just short of 50,000 barrels during the past week. Since that time the field's production has fallen off a little each day, until for the 24 hours ending 7 A.M. March 2, the field was able to show a potential of but 44,613 barrels. By far the biggest part of these wells are on the air/gas lift, and have been for several days, as the operators were prepared to apply this method of production as soon as tubing could be run in the new wells. For a new field, this is a rapid rate of decline, and in spite of the fact that but two wells per 40 acres are now completed and producing, from the number of dry holes which have been drilled in the field, particularly on the north and west edges, it is doubtful at this time whether or not the field will ever reach the 50,000-barrel mark.

Present indications are that if any extending of importance is done to the Mission area, it will be to the south, in the direction of the Carter Oil Co. Fuswa wells. These two wells, in the northwestern part of 18-8-5, are making a combined production of about 1500 barrels.

Further indications were offered during the week that the Wilcox production, (if any) in the area west of the Allen pool in southern Seminole county, does not lie between the Sinclair Oil & Gas Co. discovery well and the northwest offset to T. B. Slick's dry hole to the southwest. Sinclair's No. 1 Joanna, in the NE NW or 24-5N-7E, between these two wells, is another Wilcox failure, getting water in that formation at 4457 feet. It may make some kind of a well in the Cromwell, to which it will be plugged back. The Sinclair's No. 1 Jefferson, SE NE SE of 25-5-7, offsetting diagonally Slick's failure, is still struggling with the gas which broke in from above the pipe set on top of the sand. This test will probably make a Wilcox sand producer when finally put in shape, and may mean that there is a Wilcox sand pool running due north from it, under the Cromwell sand gas wells a mile and a half or so north.

This, and the possibilities of production between the St. Louis and Pearson Switch areas, were about all the news that individual wells afforded in the Seminole district. In the SE NW of 16-7-4, between the Pearson Switch and St. Louis pools, the Darby Petroleum Corp. No. 1 Youngblood, is apparently trying mightily to make a well of itself. It is running more than 100 feet high structurally, and while drilling in the Hunton lime is making better than 700 barrels per day. Last reports from the well, as of the morning of March 2, put its present depth at 3957 feet. It is being drilled to the Wilcox sand.

The Valley Center pool, north of Wichita, Kansas, got two new wells during the week, though neither of them extended any amount of territory. The field now has ten producers, including the Marland Production Co. No. 1 Goodrich, making a total of 7,200 barrels per day. The Marland well, which had such a spectacular opening when it was drilled in, is now making about 1,000 barrels of oil per day, pumping and flowing. It is also making about 100 barrels of water.

THE newest well in the field, the Buvibar et al. No. 3 Lyons, is the highest well structurally in the field. It topped the pay at 3350 feet, and four feet in it started off at the rate of 1,400 barrels per day. The increase of water in the Alladin Oil Co., (nee' La Robb) No. 1 Smyser, indicates that it is an edge well, and probably the north edge, at that. There are, however, several new first reports from the Valley Center townsite play, which indicates that the operators starting the wells are not afraid of the water, at any rate. Most of them are individuals and are in the clear, should the wells be dry, having sold royalties, stock, etc., in sufficient amounts.

* * *

Notes on the Week

The Gypsy Oil Co. et al. No. 1 Guinn, a wildcat northeast of St. Louis, is apparently a failure. Topping the Wilcox at 4671, the hole filled with water at 4679 feet.

* * *

Sinclair Oil & Gas Co. No. 1 Nesbit, offsetting to the east T. B. Slick's good discovery well north of the St. Louis pool, has about given up the ghost. It has 2500 feet of water in the hole after topping the Wilcox at 4151 feet.

* * *

Phillips Petroleum Co. No. 1 Mill, a wildcat in northeastern Seminole county, is another failure, so far. After topping the Mayes at 4225, the Woodfort at 4339, the Misener at 4382, and the Hunton at 4384, it is now drilling in the latter formation at 4426 feet with the hole full of water.

* * *

One of the most closely watched wells in the Sedgwick county area of Kansas is the Shell Petroleum Corp. No. 1 Lygrisse, in the SE NE of 15-26S-2E. Although it had a hole full of water at 2500 feet, it is running higher than any well now drilling in the eastern part of Sedgwick county. Last reported depth was 2510 feet.

New Attempts to Raise Oklahoma Oil Tax

TULSA, March 1.—Representative Roe, of Pittsburg county, has introduced into the Oklahoma legislature a bill providing for an increase in the gross production tax on oil and gas from the present three per cent to five per cent. This thing happens at every session of the legislature, but seldom reaches any real dignity. The fact that the people of the state in an election in 1926 decisively defeated an attempt to increase oil taxes seems to be kept in mind by the lawmakers.

A movement in Kansas to fasten a three per cent gross production tax upon the industry appears to have been killed. Advices from Topeka are to the effect that the bill, which is still in committee, probably will be reported out unfavorably. Land owners, aroused, wrote hundreds of letters to the legislature protesting that the tax would be inimical to their interests, as recent developments promise a large development program in Kansas for this year which would be retarded if taxes were increased.

Henry Aggers Dead

HOUSTON, March 2.—Funeral services were held at Ranger, Feb. 1, for Henry Aggers, 86, veteran oil driller from early Pennsylvania development days until his retirement in 1924. Mr. Aggers died at the home of his son, Roy Aggers, Feb. 26, after a short illness. The veteran driller, who began his career in 1863, four years after the Drake discovery, worked in Pennsylvania, California, Oklahoma and elsewhere before locating in Texas at the time of Ranger development. In 1927, he was presented a bronze medal at the International Petroleum Exposition in Tulsa.

Our Industry—A Page of Facts and Personalities

By Paul Wagner

National Petroleum News

Houston

The new board of directors resulting from a merger of the Greyburg Oil Co., San Antonio, and the Indiana Oil & Gas Corp., subsidiary of the American Controlled Oil Fields, Ltd., consists of Silas M. Newton, Dr. F. L. Thomson, Charles S. Diehl, A. J. Devlin and John W. Choate. Under terms of the merger, Indiana Oil & Gas Corp., with headquarters in New York City, controls 83 1/3 per cent of the Greyburg company. New officers of the Greyburg were elected as follows: Dr. F. L. Thomson, formerly president of Greyburg, chairman of the board of directors; Silas M. Newton, president; John W. Choate, vice president; J. S. Young, vice president; Charles S. Diehl, vice president; A. J. Devlin, secretary; Dr. F. L. Thomson, treasurer; E. Palmer, assistant secretary-treasurer; C. E. Josten, assistant treasurer.

A new Dubbs process cracking plant has been placed in operation at the San Antonio refinery and plans are going ahead for the extension of service station facilities in the Alamo city. The Greyburg controls crude oil production in Cooke and Caldwell counties, Texas, in addition to about 12 miles of riverbed leaseholds formerly belonging to the Oil Operators Trust in the Yates field area of west Texas.

* * *

H. E. Van Aubel, geologist, who has been in Venezuela for the Royal Dutch-Shell group companies, recently returned to California. He is regularly employed by the Shell Oil Co. (California) with offices in the Higgins building, Los Angeles.

* * *

Nathan P. Isenberger, formerly with the Amerada Petroleum Corp., is now in charge of a San Angelo geological office for the Superior Oil Corp. He works under E. C. Edwards, chief geologist, who now maintains Fort Worth offices.

* * *

After two years in South America, where he was identified with exploratory work of the Venezuela Gulf Oil Co., Max L. Krueger has returned to the United States. He is now in Los Angeles for the Pacific Eastern Production Co., a Gulf Oil Corporation subsidiary, of which Walter B. Pyron is the Pacific Coast vice president.

* * *

Walter Tschudin, operating head of the Sinclair Mexican Companies, has been elected president of the Colonial Club at Tampico for 1929.

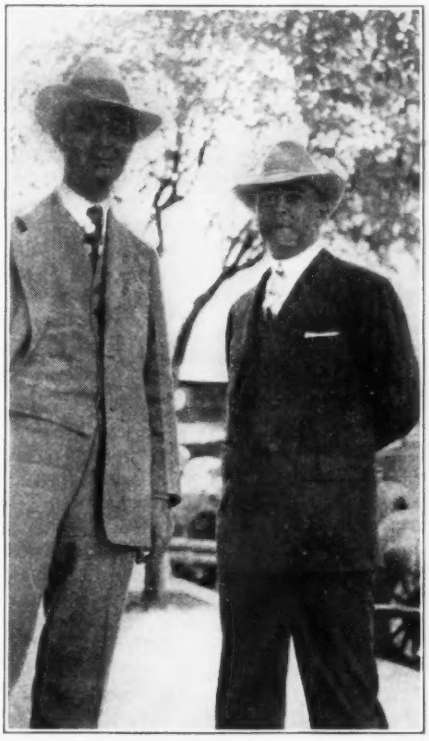
* * *

Louis H. Freedman, consulting geologist under retainer by the Snowden-McSweeney Oil Co., at Fort Worth, is again making headquarters in North Texas after a business trip to Mexico.

* * *

An accompanying snapshot shows two leading young oil men of Fort Worth, namely, John Hancock, legal counsel of Texas Pacific Coal and Oil Co., at the left, and William H. Dunning, drilling contractor. Mr. Dunning is also an Independent producer.

Mr. Hancock is widely known as an oil lawyer, having for years occupied his present position with the Texas Pacific. Mr. Dunning originally took up the acreage in Crane-Upton counties, embracing the Gulf Production Co.'s McElroy ranch field of some 27 sections. He turned most of the block to the Gulf before it was tested, retaining a half dozen fractional sections at that time. Later, when an oil discovery was made, Mr. Dunning sold his retained leaseholds to the Gulf for a consideration said to be $1,800,000.



John Hancock and W. H. Dunning

William Groundwater, transportation manager of the Union Oil Co. of California, Los Angeles, has been re-elected a director of the Pacific American Steamship Association, his fourth year in that capacity.

* * *

District offices in Texas of Marland Production Co. hereafter will be manned by geological and scouting representatives, the last mentioned also serving to some extent in land leasing work. All district offices in Texas will be under the Fort Worth division, which also has jurisdiction over southeastern New Mexico territory. J. J. Maucini, geologist, and M. J. Bonham, scout, will continue at Amarillo. Charles D. Vertress, geologist, has been transferred from San Antonio to Abilene and John H. Asbury, scout, will continue there. G. C. Phillips, scout, and A. R. Downen, telegraph operator, will stay at San Angelo. R. C. Honea is scout in the Wichita Falls territory and Dave J. Finley, formerly scout at Pecos, in west Texas, has been transferred to Midland.

* * *

An association of geophysics in Mexico, with Mexico City as headquarters, has been established with a board of directors as follows: Trinidad Paredes, head of the petroleum department, government of Mexico; R. Monges Lopez, oil company geophysicist; Juan Korzujin, professor of the Petroleum School at Mexico City; Edo. J. Helbling Ziehl, secretary.

* * *

For each five-year period over 10 years the wearer gains a ruby on service pins issued by the Union Oil Co. of California, Los Angeles. A total of 35 years' service brings the addition of a diamond. Next year, William W. Orcutt, vice president and director, who is second in point of service only to President W. L. Stewart, Jr., will get his diamond.

Mr. Orcutt founded the Union's geological department years ago and rose to his present executive position through the exploratory branch of the industry. The foundation he built made him one of the country's best known geologists and earned for him an exalted place in the profession on the Pacific Coast. Mr. Orcutt is a native of Dodge county, Minnesota. He moved to California in early life, however, and was graduated from Leland Stanford University at Palo Alto, with an A.B. degree, in 1895.

Besides occupying executive positions on various subsidiaries of the

Union Oil Co. of California, Mr. Orcutt is identified with many clubs and technical organizations. He holds membership in the Sons of the Revolution Society, American Society of Civil Engineers, the Seismological Society of America, the Southern California Academy of Sciences and others. Clubs include the Los Angeles Athletic, Los Angeles Country, University, Jonathan and El Caballero, all at Los Angeles.

* * *

Fred Wagner, formerly of the Stoll Oil Refining Corp., at Louisville, is now connected with the Bossier City refinery accounting department of the Louisiana Oil Refining Corp., Shreveport.

* * *

J. L. Minahan, independent operator, is again making headquarters at San Antonio, which he calls home. Mr. Minahan, who was at one time connected with southwestern activities of the Shell Petroleum Corp., when it was known as the Roxana, has been active recently in Oklahoma.

* * *

This department hereby gives credit to "The Loreco Diamond," house organ of the Louisiana Oil Refining Corp., Shreveport, edited by Louis F. Clark, for a "petrolized" version of a long familiar saying:

"You can fuel some of the people all of the time and all of the people some of the time, but you can't fuel all of the people all of the time."

* * *

C. O. Rockwell, general manager of the Rio Grande Valley Gas Co., with headquarters at McAllen, Texas, operates the farthest south natural gas system in the United States. The system, which draws its gas supply from the Laredo district, serves Brownsville and intermediate cities in the Rio Grande valley. Before going to McAllen, Mr. Rockwell was for 13 years with the Ohio Fuel Gas Co., at Mr. Vernon, Ohio, and for seven years with the New York Oil Co., at Casper, Wyoming.

* * *

Frank Cullinan of Dallas, vice president of the Republic Production Co. of the American Republics Corp. group, has been visiting Panama and South American counties, in February.

* * *

Preliminary survey has been completed, according to W. A. Moncrief, individual operator of Fort Worth, for the Yates & West Texas railroad, connecting Rankin and Sheffield, via Iraan, in the Yates field of Pecos county. Mr. Moncrief is one of the backers of the enterprise. The line, to be constructed after approval of the Interstate Commerce Commission, will be about 50 miles long, connecting at Rankin with the Kansas City, Mexico & Orient railroad.

D. A. Cant

D. A. Cant, representative in the southwest of the Regan Sales Co., San Pedro, California, makes his headquarters at Dallas. His activities, however, take Mr. Cant very thoroughly into the oil producing regions of Louisiana, Arkansas and the Lone Star state. Recently, a friend unfamiliar with Mr. Cant's Dallas address remarked—after trailing him for three weeks—that "he is the busiest man I know in the equipment business."

* * *

M. K. Barrett, recently stationed in New Mexico, has been transferred to San Angelo by the Skelly Oil Co., for geological work in the west Texas Permian salt basin region. He succeeds P. R. Yewell, who recently resigned to reengage in consulting work. Joe Morero, formerly of San Angelo, is in charge of Skelly's geological work in New Mexico.

* * *

Walt M. Small, formerly of the Agwi Companies at Tampico, never in his "wildest dreams of game country thought of such a paradise of wild life" as he found when he went to Africa for the Comphania de Petroleo de Angola. Writing to Rudolph Geiser, a Tampico friend, Small refers to a recent trip from a point near the mouth of the Congo some 525 kilometers (a kilometer is five-eighths of a mile) southward, skirting the coast line. He says that only a poet could describe the myriads of wild fowl heard and sighted on the trip. Then there were elephants, antelope, black and red buffalo, a baby hippopotamus and other species of large animals to cross his path. The joke of it all, Small says, "is that I came to Angola without rifle, shotgun or salt water tackle."

* * *

A new operating company, of which he is president, has been formed by Robert R. Penn of Dallas. It will be known as the Penn Oil Co., a Delaware corporation, with authorized capital of $2,000,000. Wildcat test drilling, acreage and properties formerly held by Mr. Penn individually have been transferred to the company. J. M. Willis, Jr., is secretary-treasurer. Directors include, besides Messrs. Penn and Willis, John R. Black, Marion S. Church, Heath M. Robinson, R. A. Wilson and Marion A. Knight of Dallas and E. C. Marrs of San Antonio. Mr. Robinson and H. S. Forgeron will conduct the company's geological work. Field activities will come under W. A. Black, transferred from Albany to Midland, Texas.

* * *

Dean F. C. Bolton of the School of Engineering, Agricultural and Mechanical College of Texas, announces the addition to the school's curriculum of a course in petroleum production engineering, effective with the term beginning next September.

* * *

Southern Union Gas Co., operating a short line gas supply system from Winkler county to Pyote and Pecos, Texas, is affiliated with the Murchison Oil Co., of Dallas. C. C. Tucker superintends gas line operations, with headquarters at Pyote. M. Ulmer has been in charge of construction work on the new 24-mile extension of the system to Pecos from Pyote.

* * *

H. G. Stinnett has been named president and J. L. Dyer secretary-treasurer of the Gray-Tex Oil Co., formed at Sherman to develop leases in Liberty country, Texas.

* * *

J. O. Grevemberg, formerly with the Mexican Gulf Oil Co., in the Tampico district, has been transferred to Maracaibo, where he will be identified with South American operations of the Venezuela Gulf Oil Co.

* * *

Natural gas continues to grow in favor for industrial fuel, where obtainable in adequate quantities and under favorable conditions. One of the latest installations is at the Humble Oil & Refining Co.'s Ingleside plant, in the Corpus Christi bay district of Texas. Ingleside is served by a 16-mile 6-inch gas pipeline built from the White Point field by the Moran Corp. of the South. W. T. Moran of Shreveport is president and John W. Anderson of Houston is vice-president and civil engineer in charge of operations. It is proposed to extend the system six miles to Aransas Pass, where domestic consumers would be supplied.

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OCECO FITTINGS
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Winkler Operators Decide Against Production Cut of 50,000 Bbls.

By Paul Wagner
N. P. N. STAFF WRITER

FORT WORTH, March 1

OBJECTIONS raised at a meeting of the Winkler county advisory committee in Fort Worth, Feb. 27, resulted in decision not to recommend to the Railroad Commission of Texas a proposed decrease in allowable production under prorating practice of 50,000 barrels daily.

The proposal, which would have cut the field production from 175,000 to 125,000 barrels daily, had been made in a letter mailed committee members, Feb. 23, by Ed A. Landreth, chairman. The Landreth letter was accompanied by a report of Reed Alsobrook, field umpire, recommending the pinching of wells as a means of offsetting water encroachment.

All members of the advisory committee were present at the Fort Worth meeting except John R. Suman of Humble Oil & Refining Co., Houston, who wired his company's vote in favor of a production decrease.

After the closed meeting of the committee, Mr. Landreth's office announced merely that enough opposition had been shown to the reduction proposal to make the plan unworkable. The official vote obtained later showed the following against reduction: Atlantic Oil Producing Co., Atlantic and J. D. Collet partnership, Bankers Petroleum Co., Eastland Oil Co., Murchison Oil Co. and Cranfill Brothers partnership, Murchison & Lee partnership, Pure Oil Co., Richardson, Kelsey and White Eagle Oil & Refining Co. partnership.

Companies voting for reduction include Cranfill & Reynolds, Inc., Magnolia Petroleum Co., Shell Oil Corp., The Texas Co., Skelly Oil Co., Southern Crude Oil Purchasing Co., Winkler Oil Production Co., American Maracaibo Co., Amerada Petroleum Corp., the California Co., Culberson Brothers Oil Co., Empire Gas & Fuel Co., Gulf Production Co., Humble Oil & Refining Co., Marland Production Co., and Prairie Oil & Gas Co.

The following royalty interests also voted for the reduction: Grisham Hunter Corp., Gibson & Johnson, Northrup & Carr and Peerless Oil & Gas Co.

The Murchison & Lee interests and the Bankers Petroleum Co. are parties to injunction suits now pending against the railroad commission, seeking to restrain the operation of prorating orders as applied to their Winkler properties.

Pure Oil Co. is said to oppose reduction of the field allowance on engineering grounds. The position of the Atlantic Oil Producing Co., which recently completed a 35,000 barrels daily capacity pipeline from west Texas to the Gulf Coast, has not been publicly announced.

In announcing the reduction movement, Mr. Landreth had pointed out that "with a crude surplus of 66,000,000 barrels conservatively estimated for the present year, at the rate of production, the inevitable results are crude price cuts that will not enable the operator to produce his crude at a profit."

Mr. Alsobrook's report, accompanying the Landreth letter, said:

"That old morbid eagerness for quick profits as returns on investments, which desire drives some people past the warning signs of economy, thrift and previous experience of others, has again wrought her inevitable destruction upon a Winkler county operator.

"The Bankers Petroleum Co.'s well No. 1 located in unit 12, sec. 30, block B-5, Hendricks pool, which well when last given proration test (for 24 hours potential) made 4654 barrels of as clear, pretty pipeline oil as is produced in this field, went to 65 per cent cut oil in less than 48 hours time, after being produced 23 days; opened to capacity under the privilege gained through temporary injunction against the enforcement of the proration plan.

"THE details of how this havoc was accomplished are as follows: Starting with a well head pressure January 15 (that required to stay within proration) of 380 pounds on 14/64-inch choke, the well was opened (varied daily) from 50/64-inch to 1½-inch and with a gradual pressure decline to 85 pounds. The gross production for the 23 days was 37,752 barrels, or an average of 1641 barrels per day. The period of time the well was overproduced was from Jan. 15 to Feb. 20, except 12 days in the latter part of January when the well was shut in due to lack of tank cars to transport oil to Fort Worth."

After describing his letter as written for a three-fold purpose, Mr. Alsobrook outlined the following:

"First, to give the advantage of this information, which shows conclusively how suicidal it is to open the wells in this field and incur a treating expense that is otherwise staved off by retention of pressure on wells.

"Second, to show, as in this case, what you can count on as the true potential of this field. This well, which gaged 4654 barrels, actually made (under pressure less than 85 pounds) an average of 1641 barrels per day, or 35 per cent of the tested potential.

"Third, and the most important of all, these findings, together with all other observations, suggests the immediate pinching of the field to not to exceed 125,000 barrels per day daily outlet, if we would save it from the fastly encroaching water."

IN THE prorating period of Feb. 16-28 inclusive, the Winkler field potential was rated for prorating practice at 2,490,338 barrels daily from 528 completed wells. The figures, as frequently explained in NATIONAL PETROLEUM NEWS, are based on one-hour gages for use in the prorating yardstick and are not to be construed as representing the true exploitable potential under open flow producing practice, were that either practicable or desirable in a field backed up by natural water drive pressures.

The impression is growing among Winkler operators, and this had its influence on some of the opponents of decreased production, that water conditions in the field involve problems of individual well handling. Some of the wells act differently than others and many operators consider individual handling and study necessary in the application of back pressures.

After the Fort Worth advisory committee meeting it was announced that Mr. Landreth has resigned as its chairman, not because of failure to act on his suggestion limiting production but because his Winkler interests are confined to royalty holdings since the sale of Landreth properties to The Texas Co. some time ago.

L. E. Barrows, Fort Worth division manager of The Texas Co., was named to take Mr. Landreth's place on the committee and P. A. Woodruff, production vice-president of the Southern Crude Oil Purchasing Co., subsidiary of the Pan American group, succeeds him as chairman.

Associated Finds Deeper Sand At Santa Fe Springs

LOS ANGELES, March 1

THE discovery by the Associated Oil Co. of a still deeper sand at Santa Fe Springs has caused speculation as to how many sands there may be. The finding of the O'Connell and Clarke zones and this new deeper zone, as yet, unnamed, will probably move forward the peak of Santa Fe Springs from May to November. How these zones will affect the total production only time can tell. Several of the operators in the O'Connell zone have decided to drill for the Clarke, because of the poor showings found above it.

The Associated Oil Co. found oil sand at 7800 feet and were still in it at latest reports, after passing through approximately 40 feet of sand.

Besides this interesting development on the western edge of the Santa Fe Springs field, the Plymouth Oil Co. appeared to be in the money with the striking of oil sand stringers at from 6820 to 6863 feet in the Roberts well. This discovery being on the extreme eastern edge of the field will, if productive, extend the deep zone area considerably. The fact that at least five wells in addition to the Getty No. 19 are down to, if not in, the O'Connell zone has created much interest in the expected testing of the Richfield Elliott No. 2 within the next few days. It is now standing cemented at 7162 feet.

Because of the condition of the oil sands found in the California Eastern's Santa Fe No. 2, which has cored over 100 feet of oil sands and shale, it is believed that the water in the Getty No. 19 is coming from below the shut off. This Getty well continues to flow with considerable water, but it is improving and as there is no emulsion the water is easily separated from the oil, leaving less than one per cent cut when the water is drained off.

Lawndale continues to be the big question mark in the California oil industry. Since the Standard's Vance No. 1 and the Superior Oil Co.'s Ritter No. 1 failed to find anything promising at critical depths many conjectures have been made as to the cause of that failure. Chief among these explanations is the suggestion that the Smith Bros. Peck No. 1 is actually producing from a deeper depth than that reported and that the trend of the structure lies west of the discovery well. Many operators are holding up drilling until more is known of the limits of the field.

Drilling at Kettlemen Hills continues at a very rapid rate, with the Standard Oil Co.'s No. 81 leading at a depth of 4178 feet. The Standard had to skid its No. 61 twenty-five feet because of the collapse of the 18⅝-inch casing at a depth of 1516 feet.

Considerable difficulty is found in keeping circulation up during the first thousand feet of hole. This difficulty has been overcome to some extent by the use of a new substance —aqua jell— which keeps the mud in suspension. It is not thought that the production from this highly potential field will have much effect upon the state's total output for several months, because of the extremely hard drilling encountered at greater depths.

There is every reason to expect that the long awaited test on the Continental Oil Co.'s Franklin No. 1 at Carpenteria will be made within the next week, as 6⅝-inch pipe is in the hole and set at 3973 feet, with the bottom at 3980 feet. Continental officials are all ready to carry the hole deeper if no commercial production develops at this depth for they are confident that such a gas showing as was first found is a good indication. Steel storage tanks will be completed and in readiness for the expected production.

Few developments were made during the past week in the other California oil fields, which fact, in view of the prospective increase in production at Santa Fe Springs, Lawndale, and Kettleman Hills, may be considered fortunate.

Texas Pacific Gets Gas In New Mexico Test

HOUSTON, March 2.—Texas Pacific Coal & Oil Co.'s No. 1 state test, southeast corner of southwest quarter, 22-23S-36E, Lea county, New Mexico, blew out at 3118 feet, March 1, making 15,000,000 cubic feet of gas daily. The test shows considerably more gas than found in the No. 1 Lynn test of Marland Production Co. and the California Co., at a similar depth, one mile southeast.

The gas in the Texas Pacific well was found 173 feet below the top of the brown lime formation of the territory and 289 feet above sea level.

The Lynn test, in 26-23S-36E, made as high as 50,000,000 cubic feet of gas after drilling to total depth of 3780 feet and plugging back to 3490 feet. Casing will have to be recemented in the Lynn, as too much water is now showing up with the gas.

Marland & California's No. 1 Lockhart, in 31-21S-36E, is about a 170-barrel well at 3990 feet. About 4,000,000 cubic feet of gas daily is being produced with the oil.

Seminole District Production, Week Ended February 28, 1929

MISSION POOL

Company	Lease	Location	Feb. 28 Wells	Feb. 28 Prod.	Feb. 21 Wells	Feb. 21 Prod.
Amerada	Rice	5– 8–6	1	610	1	990
Carter	Fuswa	18– 8–6	2	1,477	2	1,477
Carter	Micco	8– 8–6	2	480	2	300
Carter & Denver	Melissa	9– 8–6	1	955	1	900
Darby	Judy	1– 8–5	1	80	1	105
Gypsy	Baby	6– 8–6	1	15	1	15
Gypsy	N. Barkus	6– 8–6	6	7,190	6	2,542
Gypsy	S. Barkus	7– 8–6	1	100	1	0
Gypsy	B. Dosar	7– 8–6	3	3,170	3	3,285
Gypsy	Hardy	7– 8–6	4	840	4	1,505
Gypsy	C. Harjochie	7– 8–6	3	1,160	3	1,045
Gypsy	L. Micco	8– 8–6	2	140	2	227
Gypsy	S. Micco	8– 8–6	1	20	1	0
Gypsy	Mission	5– 8–5	5	4,253	5	3,824
Gypsy	Mosar	1– 8–5	3	1,587	3	587
Independent	Lawson	1– 8–6	2	3,845	2	3,077
Independent et al.	Payne	7– 8–6	2	2,060	2	2,510
Marland	Maines	7– 8–6	2	2,050	2	1,485
McMahon et al	Harjo	7– 8–6	1	382	1	380
Mid-Kansas	Moore	7– 8–6	1	170	1	145
Minnehoma	Neal	7– 8–6	2	1,411	2	1,751
Pine	Hario	6– 8–6	1	979	1	160
Pine	Micco	8– 8–6	1	20	0	0
Prairie	Melton	6– 8–6	2	1,150	2	65
Prairie	Micco	5– 8–6	1	0	1	15
Prairie	Townsend	6– 8–6	1	1,370	1	0
Prairie & Gypsy	Owens	18– 8–6	1	0	1	475
Shaffer	Weaver	12– 8–5	1	1,175	1	1,163
Shell-Marland	Herndon	7– 8–6	1	425	1	707
Shell-Papoose	Maines	7– 8–6	4	2,098	3	2,184
Sinclair	Hardy	7– 8–6	3	1,422	3	1,328
Sinclair	Judy	1– 8–5	1	255	1	0
Slick	Crane	7– 8–6	1	0	1	0
Tidal	Nellie	12– 8–5	2	1,490	2	2,165
Twin State	Hayes	8– 8–6	2	2,690	2	3,457
Twin State	Judy	6– 8–6	2	3,210	2	2,410
Twin State	Ripley	12– 8–5	1	710	0	0
Totals			71	48,989	68	40,279

SUMMARY

Field	No. of Wells	Prod. Feb. 28	No of Wells	Prod. Feb. 21
Little River	327	84,059	326	84,359
Maud	80	36,168	74	39,873
Mission	71	48,989	68	40,279
Bowlegs	310	36,159	311	33,334
Earlsboro	303	60,242	301	59,355
Seminole	281	34,640	281	34,048
Searight	70	9,526	68	9,689
St. Louis	309	111,390	308	104,638
GRAND TOTAL	1,751	421,163	1,737	412,830
Average Per Well		241		234

Completions in Oklahoma and Kansas, Week Ended March 2, 1929

OKLAHOMA

Beckham County

Company	Well No.	Location	Depth	Init. Prod.
Martin	1	C NW SE 1-8-25 W	T.D. 3036	Dry

Carter County

Company	Well No.	Location	Depth	Init. Prod.
Simpson-Fell	1	SEc 23-1-3 W	2454-3005	35

Creek County

Company	Well No.	Location	Depth	Init. Prod.
Shell	1	NEc NW NW 15-15-8 E	3804-3826	45
Twin State	7	SEc NW NE 20-17-7 E	2745-2776	80
Shaffer	5	SE NE SE 18-17-7 E	2778-2820	20
Bengall	10	SW NW SW 17-17-7 E	2807-2827	60
Dixie Drlg	1	NEc SW 30-17-9 E	T.D. 2745	Dry
Lebow Drlg	17	NEc NW NW 17-17-7 E	T.D. 2910	Dry
Curtis	1	NWc 15-18-9 E	T.D. 3190	Dry
Sherry et al	1	C SW NE 24-19-9 E	T.D. 3065	Dry

Comanche County

Company	Well No.	Location	Depth	Init. Prod.
Franklin	1	NWc 2-4-11 W	T.D. 3630	Dry

Grant County

Company	Well No.	Location	Depth	Init. Prod.
Sooner State	1	SWc NW 34-26-4 W	T.D. 550	Dry
Larutan Fuel	1	NWc SE 23-27-3 W	T.D. 662	Dry

Harper County

Company	Well No.	Location	Depth	Init. Prod.
Kopiach	1	NEc SE 24-27-21	T.D. 108	Dry

Kay County

Company	Well No.	Location	Depth	Init. Prod.
Marland	1	SWc 6-26-1 W	T.D. 3664	Dry
Carter	9	C SW SW 17-29-1 E	3329-3352	240
Carter	1	C NW NW 20-29-1 E	3405-3429	260

Kiowa County

Company	Well No.	Location	Depth	Init. Prod.
Medlin	1	NEc SW 18-6-16 W	T.D. 500	Dry

Marshall County

Company	Well No.	Location	Depth	Init. Prod.
Fleming et al	1	CSL NE NW 24-5-5 E	T.D. 766	Dry

McClain County

Company	Well No.	Location	Depth	Init. Prod.
Empire	1	SE NW NW 29-5-3 E	T.D. 4800	Dry

Muskogee County

Company	Well No.	Location	Depth	Init. Prod.
Smith	2	CNL NW NW 30-15-16 E	T.D. 1913	Dry
Nourse et al	1	NWc SW 8-15-15 E	T.D. 1222	Dry
Grubbs-Young	3	CWL SW NW 8-15-15 E	1190-1203	120 OWD
Bryan-Emery	1	SE SW SE 5-15-15 E	1635-1640	10

Okfuskee County

Company	Well No.	Location	Depth	Init. Prod.
Misener et al	2	NWc SW NE 2-10-11 E	1768-1785	5
Cosden	4	NWc SW SW 19-11-11 E	2305-2317	110
Champlin	11	SE NE SW 15-11-11 E	3492-3511	205
Champlin	1	SE NE SW 29-12-10 E	3147-3160	200

Okmulgee County

Company	Well No.	Location	Depth	Init. Prod.
Kearney	3	NEc SW 21-11-12 E	T.D. 1753	Dry
Miller et al	1	NE SE SE 3-14-12 E	T.D. 2724	Dry
Sidwell Drlg	3	NEc SW SW 4-14-11 E	T.D. 2530	Dry

Okmulgee County

Company	Well No.	Location	Depth	Init. Prod.
Pine	1	NEc SE NW 18-15-13 E	2186-2187	3.5M

Osage County

Company	Well No.	Location	Depth	Init. Prod.
Okla. Power & Water	113	NW SW SE 30-21-10 E	1927-1973	15
Gypsy-Marland	1	NE NW NE 16-23-7 E	3013-3078	100
Winona	11	CWL SW 25-24-9 E	2070-2092	OWD 4
Texas	1	NWc SE 22-24-7 E	2887-2914	275
Tidal	1	NEc NW SW 29-21-11 E	T.D. 2594	Dry
Mid-Co.	3	NWc SW SW 24-21-8 E	T.D. 1225	Dry
Silurian	1	SWc NE 12-23-11 E	T.D. 1728	Dry

Pawnee County

Company	Well No.	Location	Depth	Init. Prod.
Hemlock	1	NEc 8-20-9 E	T.D. 2998	Dry
Magnolia	2	SWc NW SW 2-20-6 E	3005-3025	4.7M

Pottawatomie County

Company	Well No.	Location	Depth	Init. Prod.
Sinclair	4	NW SW SW 24-7-4 E	4238-4266	OWD 480
Magnolia	2	SW NW SE 20-7-5 E	4314-4325	323
Shaffer	3	SWc 30-7-5 E	4165-4225	245
Sinclair	7	NW SE NE 19-8-5 E	4150-4169	480
Sinclair	5	SW NW NE 19-8-5 E	4237-4274	480
Phillips	2	SE NE NW 19-8-5 E	4169-4185	190
Tidal	1	SE SW SW 18-8-5 E	4198-4242	520
Pure	4	NE NW SE 18-8-5 E	4116-4145	1240
Independent	3	SW SE NW 18-8-5 E	4198-4232	1835
Independent	4	SE SW NW 18-8-5 E	4177-4215	900
Phillips	1	SW NW SW 17-8-5 E	4032-4044	695
Texas	4	NE NW SE 7-8-5 E	4083-4138	695
Mid-Continent	2	SW SE SW 5-9-5 E	4385-4400	705

Seminole County

Company	Well No.	Location	Depth	Init. Prod.
Slick	1	SEc 11-5-7 E	2638-2707	85
Texas	5	SW NE SW 11-7-6 E	4175-4181	260
Empire	2	NW SE NW 14-8-5 E	4110-4140	45
Barnsdall	4	NEc SW 11-8-5-E	4151-4160	2280
Barnsdall	2	NE SE SW 11-8-5 E	4281-4293	2820
I. T. I. O.	1	SE SW NE 10-8-5 E	4256-4259	59
Gypsy	1	NEc SE 10-8-5 E	4266-4268	850 OWD
Carter	1	NW NE NW 18-8-6 E	4629-4631	1200
Gypsy	2	NWc NE 8-8-6 E	4489-4491	330
Gypsy	1	NE NW NE 8-8-6 E	4351-4355	155
Shell-Marland	1	NWc NE 7-8-6 E	4278-4291	780
Carter et al	1	NWc SE 13-9-5 E	4289-4294	2350
Skelly-Atlantic	2	SE NW NW 6-9-6 E	4324-4342	1100
Champlin	1	SEc SW 5-7-6 E	T.D. 4966	Dry
Magnolia	1	SE NE NE 1-8-5 E	T.D. 4676	Dry
Shaffer	8	NE SW SE 1-9-5 E	T.D. 4358	Dry
Magnolia	1	NEc SW 30-9-6 E	T.D. 4510	Dry

Stephens County

Company	Well No.	Location	Depth	Init. Prod.
Franklin	3	NEc 36-1-9 W	T.D. 2490	Dry
Pace et al	1	NWc SE NE 13-2-8 W	1440-1460	40
Westheimer	2	NW SE SE 11-1-4 W	2927-3097	12

Wagoner County

Company	Well No.	Location	Depth	Init. Prod.
Rees	1	SWc NW 4-18-17 E	T.D. 500	Dry

KANSAS

Elk County

Company	Well No.	Location	Depth	Init. Prod.
Sherman et al	3	SWc NW 10-31-10 E	1978-2003	100
Elk Petroleum	11	SWc NW NW 9-30-9 E	T.D. 2870	Dry

Greenwood County

Company	Well No.	Location	Depth	Init. Prod.
Empire	11	SWc NE 21-23-11 E	1891-1921	430

Sedgewick County

Company	Well No.	Location	Depth	Init. Prod.
Barnsdall	1	NWc SW 34-27-2 E	T.D. 3429	Dry

Completions in California, Week Ended February 23, 1929

Long Beach

Company	Well No.	Location	Depth	Init. Prod.
Italo Pet. Corp.	Kading 3 (Recompleted)		6461	730
South Basin Oil Co.	No. 4		6123	510
The Texas Co.	Goddard 2		5731	90
The Texas Co.	Perrin 2		6728	450
Bowles Oil Corp.	No. 4		6061	1500

Santa Fe Springs

Company	Well No.	Location	Depth	Init. Prod.
George F. Getty	O'Connell 19		6610	3400
Richfield Oil Co.	G. P. No. 1		5889	3200
Rio Grande Oil Co.	Parkford Comm. 1		5866	1500
Rio Grande Oil Co.	Parkford Comm. 2		5842	1350
Standard Oil Co.	Koontz No. 9		5825	164
Standard Oil Co.	Walker 14		5880	1194
Standard Oil Co.	Walker 18		5783	103
The Texas Co.	Weaver 5		5310	2265
Union Oil Co.	Alexander 13		5852	2115
Union Oil Co.	Alexander 15		5819	2215
Union Oil Co.	Bell 31		4942	3748
Union Oil Co.	Bell 35		5850	2660
Union Oil Co.	Bell 36		5850	3285
Union Oil Co.	Bell 37		5848	3505
Union Oil Co.	Bell 38		6020	4150
Union Oil Co.	Bell 39		5355	2235
Univ. Cons. Oil Co.	O'Connell 2 (Recompleted)		5829	200

Seal Beach

Company	Well No.	Location	Depth	Init. Prod.
Standard Oil Co.	San Gabriel 12		5451	707

Athens-Rosecrans

Company	Well No.	Location	Depth	Init. Prod.
Cypress Pet. Co.	M & M No. 1		6506	175

Fruitvale

Company	Well No.	Location	Depth	Init. Prod.
Pacific Eastern	B 7		4060	100 bbls. an hour, shut in

Kern Front

Company	Well No.	Location	Depth	Init. Prod.
The Texas Co.	Midlands No. 11		2028	250

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended March 2, 1929

OKLAHOMA

Beckham County

Company	Well No. & Farm	Location
Benedum-Trees	1-	SWc 30-8N-25W

Carter County

Company	Well No. & Farm	Location
Shell	1-Coe Johnson	SE NW SW 18-4S-1W

Creek County

Company	Well No. & Farm	Location
Wilcox	1-Craig	NWc 30-14-10E
Olean	5-Bigpond	NEc 36-15-7E
Billingslea-Shaffer	2-Lewis	SWc 10-15-8E (OWD)
Cole et al	1-Hull	NEc NW SE SE 32-18-11E
Magnolia	15-Musselman	NWc NE NW SE 8-18-7E (OWD)

Garvin County

Company	Well No. & Farm	Location
Tidal et al	1-Haberson	C SE SE 31-5N-2E

Grady County

Company	Well No. & Farm	Location
Meridian	4-Woods	NWc 2-4N-8W
Okla. Gas Utilities	3-Dryden	NWc SE NE SE 35-5N-8W

Hughes County

Company	Well No. & Farm	Location
Magnolia	1-Godfrey	SE SW SE 6-8-9E
Superior & Amerada	1-Jimpey	SWc SE 4-8-9E
Indep. & Mid-Cont.	1-McGirt	SEc 31-9-9E

(*Continued on Page 51*)

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended March 2, 1929

(Continued from Page 50)

Jefferson County

Company	Well No. & Farm	Location
Beck	1a-Seay	SWc SE 34-6S-5W

Kiowa County

Hyde	1-Ballard	NWc 26-3N-18W

Okfuskee County

Barnsdall	1-Barnett	SE NE SE 24-11-10E
McMahon	3-Fixico	SE NW SE 29-12-10E
P. & R.-Carey	3-Monarye	NW SE SE 29-12-10E

Okmulgee County

Tiger Mt	2-Tucker	CNL NE SE 2-13-14E (OWD)
Forman-Wise	5-Rowe	NEc 10-15-14E
Trout	1-Bruner	NW SW SE 20-16-14E

Osage County

Mid-Kansas	5-	SEc NE SE SW 36-22-8E
Silurian	1-	NW SE SE 1-23-11E
Peters	9-	SEc NW SE NW 26-25-9E
Jones	1-	SEc SW 2-26-8E
Peters	2-	SW SE NW 11-26-8E

Pawnee County

Superior-Swift	1-Daniels	SW NW NE 35-20-9E
Mowry-Fugate	1a-Turner	CWL NW NW 18-20-8E

Pottawatomie County

Empire-Amerada	2-Bullock	NW NE NW 8-9-5E
Phillips	4-Wallace	NW NE SW 17-8-5E
Phillips	3-Wallace	NE NW SW 17-8-5E
Magnolia	1-Caudle	NWc SW 13-7-4E
Houston	1-James	NE NW SW, 17-7-4E

Seminole County

Pure	1-Weaver	NE SW NE 12-8-5E
Gypsy	8-Barkus	NW SE SW 6-8-6E
Gypsy	4-Barkus	NW SW NW 7-8-6E
Shell-Papoose	8-Maines	SWc 7-8-6E
Sinclair	2-Jefferson	NEc SE 23-5-7E
Shell	1-Tiger	SEc NE 5-6-8E
Magnolia	1-McGirt	SE NE NW 16-8-8E
Carter	4-Fuswa	NWc 18-8-6E
Gypsy	7-Hardy	NW SW NE 7-8-6E
Gypsy	10-Barkus	SW NW SW 6-8-6E
Gypsy	9-Barkus	NW SW SW 6-8-6E
Carter	1-Jackson	NE SE SE 10-9-6E

Stephens County

Pace et al	2-McMasters	SEc NW NE 13-2S-8W
Ven Mex-Mid-Continent	1-Thompson	NEc SE SE SW 35-1S-8W

Tulsa County

Devonian	2-Brown	CEL W½ SE NW 4-18-12E (OWD)

KANSAS

Butler County

Phillips-Shell	1-McCellan	SEc SW 23-26-6E

Chase County

Haulkey et al	1-Ryan	NWc NE 22-19-8E

Cowley County

Marland	1-Graham	NEc SW 9-32-4E

Elk County

Maun et al	4-Shrader	C SE SW 12-31-8E
Maun et al	3-Shrader	C SW SW 12-31-8E
Croft-Hunt	1-Dory	NEc SE 18-30-9E

Greenwood County

Rockhill-Taylor	1-Miller	NWc SW 2-25-10E

Coffee County

Smith et al	1-Jasper	SWc SE 15-19-4E

Sedgewick County

White Eagle	1-Baylor	SW NW NW 6-26-1E
Phillips	1-Pfeiffer	SWc NE 6-26-1E
Alladin	4-Smyser	SEc 36-25-1W
Alladin	3-Smyser	SE SE SE 36-25-1W

TEXAS

NORTH CENTRAL AND EAST CENTRAL

Brown County

Paramount	4-Mayes	Blk-609	Survey
Gore-Brown	4-Mayes	Blk-609	Ross
McGee	1-Daniels	Blk-34	Ross
Cross Cut	1-Newton	Blk-141	Kellogg
Rhodes, Higher et al.	1-Dunn	Sec-10	Mitchell Delgado
Bradstreet et al	1-Reaves	Blk-633	Belknap
Warren et al	1-Duff	Blk-623	Honeycutt
Texas Co	4-Byler	Blk-43	R&NO
Brock-Switzer	1-Herrigan	Blk-146	Bates
Amerada	2-Smith	Blk-144	Cleveland

Callahan County

Moutray	15-Hatchett	Sec-24	D&DA
Texas Co	21-Hatchett	Sec-29	D&DA

Coleman County

Pitts et al	1-Moore	Blk-161	White
Mayes	1-Hass	Sec-71 Blk-1	GH&H
T&P Coal & Oil	2-Gay	Blk-630	Fisk
Shell	1-Weaver	Sec-17 Blk-271	Gabel
Schermerhorn et al.	2-Eddington	Sec-38 Blk-187	Victoria Co. Sch. Ld.

Eastland County

States Oil	1-McDonald	Sec-7 Blk-1	HTC
Bruce-McKain & Richie	1-Marshall	.....	Moore

Erath County

Peters et al	3-Barton	.....	Kelly
Boone et al	1-Robertson	.....	Bradley

Jack County

F. H. E. Oil	1-Leffer	Abst. 256	Hughson
Republic	1-Bryson	Abst. 256	Hughson
Shaw et al	1-Loving	Sec-2744	TE&L
Panhandle P&R	1-Leffel	Abst. 256	Hughson

McCulloch County

Duffey-Silk	1-Terich	Blk-12	OT&WH Melvin

Shackelford County

Tennant et al	2-Mathews	Sec-56	
Combest	1-Mathews	Sec-2	ETRR
Cranfill-Reynolds	1-Flippers	Sec-34 Blk-11	ETRR T&P

Stephens County

Lone Star	1-Elliott	Sec-2952	TE&L

NORTH TEXAS

Archer County

United Producers	1-Brown	Blk-110	
Hines et al	1-Chancellor	Abst. 753	Sellers
Panhandle Rfg	1-Dowlen	Sec-2 Abst. 753	Allsmans
Texas Co	1-Scott	Abst. 897	HT&B
Humble	1-Turbeville	Blk-86	James
Petroleum Prod	1-Kunkel	Abst. 51	Jefferson Co. S. Land
Texas	2-Parkey	Sec-1 Blk-4	BBB&C
Freeman-Grebin	1-Harolson	Blk-19	ATNCL
United Producers	1-Kovar	Blk-53	Meade Pasture
Shell	2-C Abercrombie-Taylor	Blk 41	Meade Pasture Harris sub.
Burns-Steed	1-Turveville	Blk-159	
Rathke	2-Netherton	Abst. 411	Carson
Madden-Hunt	15-Richardson	.....	SP&RR SAR Sub

Clay County

Franklin	1-Wolfe	Blk-7 Abst. 63	BBB&C

Cooke County

Stoneman et al	1-Field-Bowers	Abst. 904	
Shell	3-Dennis	Abst. 484	Stanley
Kewanee	B-2 Hyman	Abst. 363	Hutchinson ETRR

Foard County

Shell	1-Tarver	Sec-3	GC&SF

Wichita County

Rowe et al	1-Waggoner Bros.	Blk-13 Abst. 772	
Staley-Wynne	14-Kemp-Kempner	Blk-82 Abst. 139	GC&SF
Humble	15-Taylor	Blk-81	H&TB
Texas	13-Allen-Kemp	Sec-26 Blk-10	KWVFL
Panhandle Refg. et al.	6-Burnett	Abst. 464	KWVFL Meade

Wilbarger County

Melat et al	A-2 Waggoner	Sec-10 Blk-4	
Texas	D-3 Waggoner	Sec-43	H&TC
Burton et al	K-1 Waggoner	Sec-10 Blk-4	MEP&PRR
Melat et al	B-1 Waggoner	Sec-10 Blk-4	H&TC
Burton et al	J-1 Waggoner	Sec-9 Blk-4	H&TC
Maer-Staniforth	1-Waggoner	Sec-9 Blk-4	H&TC
Burton et al	1-1 Waggoner	Sec-40	H&TC MEP&PRR

Young County

Bradstreet	5-Snider	Abst. 1276	
Bradstreet	4-Snider	Abst. 1276	Wilson
May Camp	2-Prideaux	Abst. 240	Wilson
Richards et al	3-Campbell	Sec. 1389	Rohus
Steed-Gans et al	1-Lofton	Abst. 2152	TE&L
Scott-Nance	2-Goode	Abst. 247	Bussey
Pennell et al	1-Calvin	Abst. 240	Rice
Bratcher	1-Prideaux	Abst. 274	Rohus
Fain, McGaha	5-E Campbell	Sec-1371	Tynes
Texas	1-B Stewart	Abst. 35	TE&L BBB&C

PANHANDLE

Carson County

Skelly	1-Tederick	Sec-239 Blk. B-2	H&GN

Gray County

Shamrock	2-Clayton	Sec-50 Blk-25	
Travis et al	2-Back	Sec-44 Blk-25	H&GN
Southern	3-McConnell	Sec-174 Blk-3	H&GN
Texas	6-Davis	Sec-86 Blk-3	I&GN
Cockrell, McIlroy et al.	1-McConnell	Sec-174 Blk-3	I&GN I&GN
Shell	2-McConnell	Sec-174 Blk-3	I&GN

Moore County

Skelly	6-Armstrong	.....	Proctor
Skelly	7-Armstrong	.....	Proctor

WEST TEXAS

Fisher County

Texas-Phillips	1-Hall	Sec-6 Blk-20	T&P
Mesa	1-Griffin	Sec-29 Blk-323	Bastrop Co. Sch. Ld.

Glasscock County

Hyer-Yates	4-Clay	Sec-155 Blk-29	W&NW

Iron County

Kimbrough-Flinchbough	1-Tankersley	Sec-712	Willig

Loving County

Lockhart	1-Johnson	Sec-20 Blk-56	T&P

Pecos County

Oil Oprs. Trust	15-River Bed	.....	River Bed
Oil Oprs. Trust	9-River Bed	.....	River Bed
Oil Oprs. Trust	6-River Bed	.....	River Bed
Oil Oprs. Trust	13-River Bed	.....	River Bed

Reagan County

Oberholtzer	1-Talley	Sec-6	GC&SF

Winkler County

Southern	T88C8-Hendricks	Sec-28 Blk-5	PSL

Completions in Texas, Week Ended March 2, 1929

NORTH CENTRAL AND EAST CENTRAL TEXAS

Brown County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Gutzman et al	10-Stanley	Smith	Blk-139	431-432	10
Lloyd	16-Collier	Smith	Blk-139	417-433	6
Young Bros. et al	21-Hickman	Benson	Blk-783	1239-1255	50
Amerada	1-Smith	Meyers	Blk-202	T.D. 652	Dry
Brock-Switzer	1-Dunn	Floser	Blk-203	T.D. 490	Dry
Green et al	1-Riordan	Jennings	Blk-353	T.D. 1257	Dry
Paramount	3-Mayes	Ross	Blk-609	T.D. 558	Dry

Callahan County

Moutray	14-Hatchett	D&DA	Sec-30	352-366	30
Reiter-Foster	28-Hatchett	D&DA	Sec-24	329-335	40
Bradstreet et al	11-Miller	Comal Co. Sch. Ld.		1601-1642	60
Reiter-Foster	8-Hatchett	D&DA	Sec-24	345-354	15

Coleman County

Roth-Faurot	4-Smith	GH&H	Sec-19	T.D. 3642	Dry

Eastland County

Southern	1-Thorpe	SP	Sec-456	1705-1712	4M
Lewis et al	2-Lyerla	H&TC	Sec-27 Blk-2	1283-1299	12
Jones	1-Grattis	H&TC	Sec-123	T.D. 552	Dry
Mitcham	1-Weddington	H&TC	Sec-86 Blk-3	T.D. 1645	Dry

Shackelford County

Cranfill-Reynolds	2-Diller	ET	Sec-5	T.D. 905	Dry

Stephens County

Texas	15-Gohlson	Dennison		T.D. 4309	Dry

NORTH TEXAS

Archer County

Reno	5-Parrish	SP	Abst-1004	1572-1582	5
County Line	1-Cermosek	TE&L	Sec-2409	T.D. 1441	Dry
Keller-Texas	1-King	TE&L	Sec-2422	T.D. 1553	Dry
Nicholson et al	1-Hudson	Saunders		T.D. 765	Dry
Texas	1-Parkey	ATNCL	Sec-1	T.D. 1851	Dry

Cooke County

Kewanee	5-Hyman	ET		1049-1208	102
Benson Bros. et al.	1-Ball	Hunt		T.D. 1580	Dry

Wichita County

Panhandle	7-McCarty	Fowler		T.D. 1850	Dry
Magnolia	6-Pace	Scott		T.D. 1236	Dry
United Prod	3-Allen	KWVFL	Blk-44	1478-1495	25
Wynne	13-K & K.	H&TB	Blk-82	1462-1477	250
Wynne	3-Kemp	H&TB	Blk-82	1484-1490	80
Humble et al	12-Taylor	KWVFL	Blk-81	1466-1481	100
Hines-Panhandle	13-Waggoner	GC&SF		1431-1451	40

Wilbarger County

Fain-McGaha	2-Waggoner	MEP&P	Sec-39	1930-1935	320
Phillips	2-Waggoner	H&TC	Sec-43 Blk-4	2325-2330	10
Phillips	2-Waggoner	H&TC	Sec-43 Blk-4	2302-2325	8
Shun	3-Waggoner	H&TC	Sec-18 Blk-4	2440-2444	120
Consolidated	1-Waggoner	H&TC	Sec-49 Blk-4	1309-1373	10
Fain-McGaha	30-Waggoner	H&TC	Sec-24 Blk-4	2412-2413	125
Wandrier	1-Waggoner	H&TC	Sec-7 Blk-5	T.D. 1950	Dry
Wilbarger	1-Waggoner	H&TC	Sec-55 Blk-4	T.D. 1845	Dry

Young County

Pennell-Walton	1-Ferguson	Van Sickle		T.D. 700	Dry
Steed-Gans	12-Snider	Wilson		568-573	25
Fain-McGaha	1-Campbell	TE&L	Sec-1383	T.D. 950	Dry

PANHANDLE

Carson County

Skelly	10-Schaeffer	I&GN	Sec-198 Blk-3	3230-3237	275
Navajo	2-Roling	TT	Sec-22 Blk-Y-2	3254-3870	8M

Gray County

Phillips	4-Johns	I&GN	Sec-87 Blk-3	3210-3223	65
Skelly	3-Saunders	ACH&B	Sec-4 Blk-1	2811-2820	10
Southern Pet. Explor.	2-McConnell	I&GN	Sec-174 Blk-3	3207-3224	598
Texas	1-McLarty	ACH&B	Sec-2 Blk-1	2875-2880	10

Hutchinson County

Phillips	11-Gibson	H&TC	Sec-63 Blk-46	2855-2886	60

Moore County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Barnsdall	1-Hagy et al.	Ross		3235-3275	20
McMann	1-Sneed	Robinson		3107-3119	220

Wheeler County

Lone Star	1-Shelton	H&GN	Sec-22 Blk-24	1840-1903	56M
Neudigate et al	2-Sitter	H&GN	Sec-33 Blk-24	2107-2110	58M
Wishkamper et al.	2-Fee	H&GN	Sec-80 Blk-23	1480-1505	40M

WEST TEXAS

Crane County

Hughes et al	1-State Bank	H&TC	Sec-24 Blk-4	T.D. 3651	Dry
Marland	2-Cowden	CCSD	Sec-81 Blk-X	2360-2385	25

Culberson County

Deep Rock et al	2-Seay	T&P	Sec-20 Blk-59	T.D. 1850	Dry

Howard County

Schermerhorn	3-Roberts	W&NW	Sec-137 Blk-29	2936-2960	70 (1 Hr.)
Plymouth	1-Abrams	T&P	Sec-5 Blk-32	2264-2297	62 (1 Hr.)
Owen-Sloan	8-Roberts	W&NW	Sec-136 Blk-29	2928-2980	65 (1 Hr.)
Moody	9-Roberts	W&NW	Sec-136 Blk-29	2972-2991	60 (1 Hr.)
Moody	7-Roberts	W&NW	Sec-137 Blk-29	2600-2677	250
Marland-Donnelly	1-Clay	W&NW	Sec-127 Blk-29	1990-3135	48
Magnolia	16-Roberts	W&NW	Sec-136 Blk-29	2560-2582	6
Green	6-Clay	W&NW	Sec-127 Blk-29	1804-1820	75
Amerada	5-Roberts	W&NW	Sec-128 Blk-29	2968-2989	1054

Loving County

Deleware	1-Lockhart	W&NW	Sec-69	4370-4426	25&¼M

Pecos County

Mid-Kansas-Transc.	12-Yates	I&GN	Sec-60 Blk-1	1160-1362	3504 (¾ Hr.)
Oil Oper. Trust	8-River Bed	River Bed		1060-1095	50
Quimby et al	1-Townsite	Guerra	Sec-204	T.D. 3457	Dry
Quimby	1-Gray	T&P	Sec-593 Blk-105	T.D. 680	Dry
World	1-Kloh	T&P	Sec-47 Blk-48	T.D. 3110	Dry
Dibble-Hale	1-Bonebrake	H&GN	Sec-115 Blk-8	T.D. 2004	Dry

Reeves County

World	1-Duff	Johnson		T.D. 4500	Dry
Ketsos et al	1-Kloh	T&P	Sec-5 Blk-54	T.D. 1250	Dry

Reagan County

Skelly	2-Grayson	Univ.	Sec-33 Blk-8	3085-3173	90

Upton County

Humble	10-Ricker	Denton	Sec-5	2109-2206	54
Independent	7-Wooley	GC&SF	Sec-3	2120-2124	500
Independent	6-Wooley	GC&SF	Sec-3	2154-2172	40
Independent	2-Wooley	GC&SF	Sec-3	2048-2180	703
Humble	3-Ricker	Croome	Sec-6 Blk-R	2410-2424	75

Winkler County

Southern Crude	T89E3-Hendricks	PSL	Sec-40 Blk-B-5	2543-2553	80
Southern Crude	T89E2-Hendricks	PSL	Sec-40 Blk-B-5	2800-3180	15
Marland	2-Morton	PSL	Sec-27 Blk-B-12	2865-3006	1000
Pure	C-11-Hendricks	PSL	Sec-45 Blk-26	2667-2734	1065 (1 Hr.)
Southern Crude	T88D3-Hendricks	PSL	Sec-4 Blk-B-12	2720-2980	182 (1 Hr.)
Southern Crude	T88K5-Hendricks	PSL	Sec-41 Blk-26	2778-2788	155 (1 Hr.)
Southern Crude	T88L3-Hendricks	PSL	Sec-3 Blk-B-12	2940-306	650
Southern Crude	T89C3-Hendricks	PSL	Sec-35 Blk-B-5	2815-3010	225
Southern Crude	T89T1-Hendricks	PSL	Sec-10 Blk-B-12	3101-3146	1400
Southern Crude	89T2-Hendricks	PSL	Sec-10 Blk-B-12	3092-3093	1400
Southern Crude	T89J1-Hendricks	PSL	Sec-9 Blk-B-12	2795-2920	500 (1 Hr.)
Amer. Maracaibo	1B-Hendricks	PSL	Sec-28 Blk-B-5	2930-2935	60 (Hr.)
Amer. Maracaibo	1A-Hendricks	PSL	Sec-28 Blk B-5	2995-3045	120
Southern Crude	T88D5-Hendricks	PSL	Sec-4 Blk-B-12	2800-2914	1000 (1 Hr.)
Atlantic	2A-Hendricks	PSL	Sec-34 Blk-B-5	T.D. 3000	Dry
Southern Crude	T88G1-Hendricks	PSL	Sec-28 Blk-B-5	T.D. 2979	Dry

Completions in North Louisiana and Arkansas, Week Ended February 28, 1929

Louisiana—East Carroll Parish

Company	Well	Location	Depth	Yield
Palmer Corp.	Mitchiner No. 1	8-19-11E	2717	dry, aband.

Morehouse Parish

Southern Carbon Co.	Tensas Delta No. 18	2-20-4E	2182	15M gas
Southern Car. Co.	Fee No. 51	15-20-4E	2143	33M gas

Ouachita Parish

Pipes and Mack	Wright No. 1	11-18-4E	2207	2M gas
Magnolia Pet. Co.	Morrison No. 2	2-19-4E	2210	1M gas
Hatcher & Evans	Hatcher No. 8	21-19-4E	2210	5M gas

Richland Parish

Company	Well	Location	Depth	Yield
Magnolia Pet. Co.	J. Sartor No. 2	16-16-6E	2633	dry, aband.
Com. O. & G. Co.	Boise No. 1	33-16-6E	2448	53M gas

Webster Parish—Shongaloo

Magnolia Pet. Co.	H. H. Branton No. 3	6-22-9	2688	5M gas

Arkansas—Rainbow City—Union County

Ohio Oil Co.	Nash No. 1 Acct. No. 3	6-17-13	3065	60 Bbls.

Union County—Smackover

Little Fay Oil Co.	Primm A-1	24-15-16	2072	55 bbls.
Shell Pet. Corp.	Williams No. 1	34-15-15	1975	250 bbls.

Cost Accounting for Oil Production

Graphic Presentation of Cost Data to Show Variations From the Average

Article Six

By Lester C. Uren

Professor of Petroleum Engineering, University of California, Berkeley, Calif.

PREVIOUS articles of this series have been described in some detail the methods employed in assembling the primary cost data for different departments and operations on the oil producer's property. The present and concluding article of the series, will be devoted to a discussion of the utility of cost data as an aid in the solution of various typical problems encountered in the conduct of an oil-producing enterprise and in the management of its affairs. Many of the engineering and administrative problems arising in the operation of an oil-producing property require a knowledge of costs and ability to solve them will depend largely upon the accuracy and adequacy of the cost data available.

Graphic Presentation of Cost Data

Presentation of cost data in the form of columns of figures often fails to command the attention of busy executives. Much less effort is required in making comparisons of cost data and in analyzing the causes for variation in costs, if the records are presented in graphic form. The graphic type of cost record permits of displaying rate of change in costs and fundamental relationships underlying existing costs, impossible in any column of figures, no matter how well arranged. Graphic cost records supplementing the primary numerical records, may conveniently be maintained by periodically plotting the more important cost statistics on graphs particularly designed to display to advantage the important relationships. Photostat prints or blue prints of these graphs may then be made for circulation among the interested officials.

Figure 1 presents a typical graphic cost record, which displays the variation in cost of operating a pumping well, month by month, over a period of a year, as well as the variation in cost of the major elements which go to make up the total cost. For convenience in comparison, annual average monthly costs are appended in a supplemental record extending over a period of five years. The mean total cost of operating individual wells on the property, determined by averaging costs over a period of several years, is indicated by a horizontal line extending across the record, as $4.70 per well per day.

The executive officials, on inspecting graphs of this character, may see at a glance what wells are costing more than the average to operate. The record indicates fluctuations in total cost from month to month, and shows further, whether such fluctuation is due to abnormal maintenance, labor, power or indirect expense. Unduly high expense during any period on a particular well, will thus be made apparent and will engage the attention of the executive in charge, in adjusting the factors which brought about the abnormality; or at least, will lead to an understanding of why it occurred so that a recurrence of the conditions may perhaps, be prevented in future. Unusually low costs during some particular month may lead to an investigation which will disclose possible permanent economies in subsequent operations not previously realized. It would be helpful if graphs of this character could be prepared for every operating department and even, in some instances, for different subdivisions of departmental activity.

IN CONSTRUCTION work, or in development work of any character where the rate of progress is definitely measurable and where it is possible to assemble unit costs, it is convenient to coordinate the cost record with the progress record in such a way as will indicate the efficiency attained in different parts of the work. For example, in drilling a well, the cost per foot of progress for different depth intervals, may be plotted on a graphic record as the work proceeds. Similarly, in the construction of a pipe line or in the excavation of earth or placing of concrete for an oil reservoir, graphic cost records displaying the linear cost per foot of line assembled, or the cost per cubic yard of earth removed, or of concrete mixed and placed, provide a convenient means of studying the efficiency with which the work is accomplished.

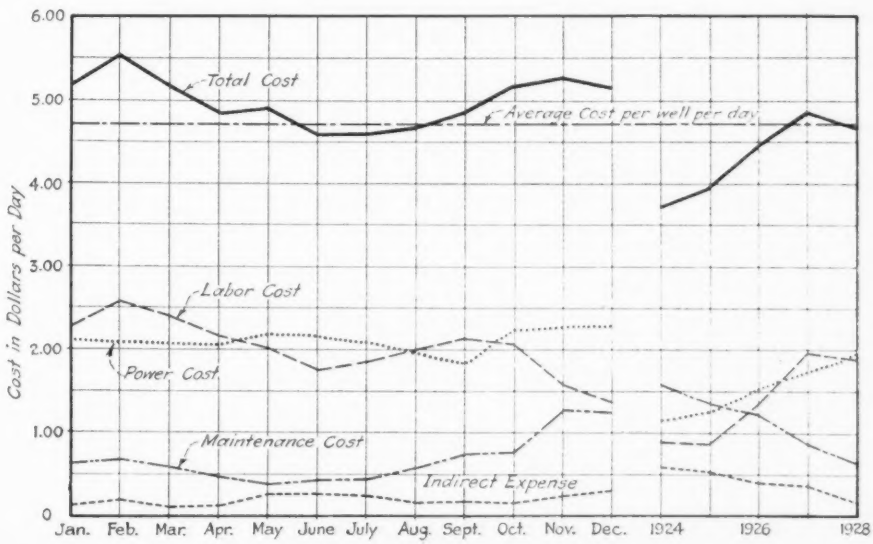


Fig. 1—Illustrating graphic method of displaying variations in cost of operating a pumping well

Figure 2 presents a graphic cost record of this character, showing in this instance, the increase in cost of drilling with depth, and variation of the particular record from the mean or average cost of drilling in the same locality. The graph shows only the routine cost of drilling and rig maintenance, and does not include the cost of casing, cementing, and the capital cost of the rig and

its equipment. A record of this type may conveniently be kept for each well drilled, unit costs being posted from the cost records to the graph at intervals as the work proceeds. Abnormally high or low costs will thus be promptly made apparent to the responsible officials. Moderate variations from the mean will, of course, be of interest only to those in immediate charge of the work, higher officials being concerned only with the more extreme variations. To better indicate the responsibility of different officials in making investigations of these abnormalities, the graphs may be ruled off in zones, as indicated in Figure 2. When the well is completed, such a record will be of value as an aid in estimating costs on new proposed work where conditions are similar.

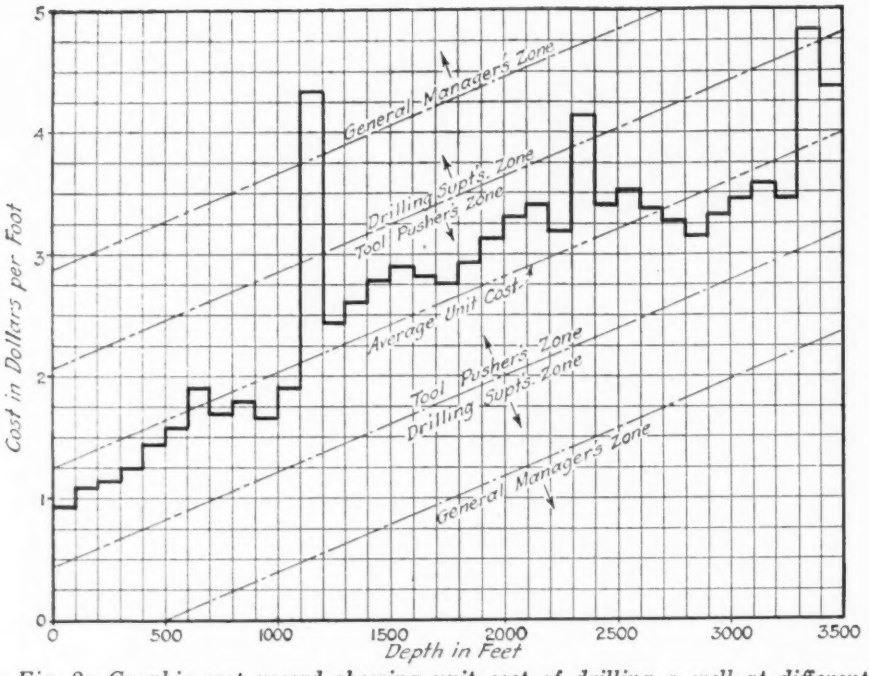


Fig. 2—Graphic cost record showing unit cost of drilling a well at different depths and variation from the mean

Economic Life Period

IN ADDITION to routine analysis of operating and development costs, cost data displayed in graphic form may assist in the solution of a variety of problems which must receive the attention of the oil company executives. For example, it is important in connection with oil property appraisals, in the maintenance of property depletion accounts and in planning the development program of an oil-producing property, to forecast the economic life of each well and the minimum profitable rate of production for which it may be operated. Figure 3 suggests a means of doing this with the aid of production cost data and the production decline curve of the well.

A record of the production of a well over a period of years, provides a means of estimating the future rate of production, by plotting the annual rate of production during the early years against time, and extrapolating the production rate curve thus determined, on into the future in accordance with the well established laws of gas-pressure decline.[1] From properly assembled cost data, it should then be possible to develop a complementary cost-of-production curve showing the cost per barrel of production for each year into the future.

In developing this curve, we may draw upon the cost data for other wells on the property in various stages of decline; or we may develop a figure representing the cost per well per day, and assuming this to remain constant—or approximately so with appropriate deductions to allow for waning productivity of the well—we may divide by the estimated rate of production for each future year, to determine the probable cost per barrel during each year. It will next be necessary to assume a future selling price scale for the oil, based on reasonable probabilities in the trend of supply and demand. In Figure 3 for example, it is assumed that $1.50 per barrel is the maximum price possible for the oil in question during the period covered by the graphs.

A HORIZONTAL line along the $1.50 abscissa of the graph, projected vertically downward from the point where it intersects the cost-of-production curve, shows by reference to the scale along the horizontal axis of the graph, the number of years of profitable operation possible for this well. Also, a line projected horizontally from the intersection of the economic life line with the rate of production curve, shows by reference to the scale along the vertical axis, the minimum daily rate of profitable production. For the conditions represented in Figure 3, the economic life of the well would be 14-years and the minimum profitable rate of production would be about 2½ barrels per day. It is apparent that a moderate increase in the assumed price of oil would operate to materially increase the economic life. For example, with $2 oil, the economic life would be extended three years.

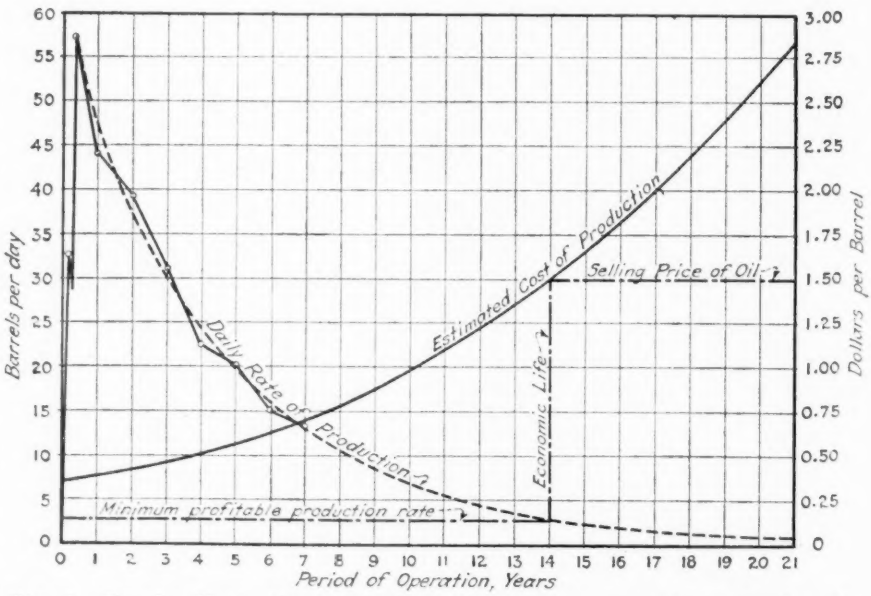


Fig. 3—Graphs illustrating method of determining economic productive life and minimum profitable rate of production for an individual well

A somewhat similar problem to that described above for determining the

1. For a brief explanation of the production-decline method of estimating the future production of oil wells, see the third article of this series, NATIONAL PETROLEUM NEWS, issue of Dec. 5th, 1928, pages 51-59.

economic life of an individual well, though more complex, is that of determining the time within which an entire property should be exhausted to realize maximum profit. We can control the time of drainage of an oil property, within limits, by varying the number of wells drilled. The greater the number of wells, the more rapidly will the property be drained. The cost of exploiting the property will likewise vary, according to the time over which operations extend.

A short period of realization requiring a large number of wells, mean higher initial capital expenditure in development work than if a longer period of drainage is determined upon. On the other hand, the operating expense will increase as the period of extraction increases. Another factor tending to increase the cost of production when operations are spread over a long period, is the interest cost on deferred production, or the discounted value of income from production deferred by reason of a slow rate of recovery: interest that might actually accrue if the production were secured quickly by a more intensive programme of development. The composite effect of these different factors presents a rather difficult problem in determining the development programme that will result in the property being drained with maximum profit. And yet, this is a problem that confronts every oil producer in the early stages of development of his property.[2]

FIGURE 4 illustrates a means of graphically presenting the necessary data and of arriving at an approximate solution of the economic life problem. From such data as is available, a graph showing the estimated number of years necessary to exhaust the property for different well spacings, is developed. This is the "acres per well" curve shown on Figure 4. From the estimated recoveries obtainable, the time of exploitation and the necessary number of wells for these different well spacings, other curves showing the capital cost of drilling wells, the subsequent cost of operation, and the interest cost of deferred production, are next developed.

The "total cost of production" curve is then determined by summation of the ordinates of the other cost curves. This curve shows how the total unit cost varies for different periods of exploitation. A scale of future selling prices for oil is next assumed, that shown in Figure 4 contemplating a gradual increase in price with time. Comparison of the total-cost-of-production curve with the selling-price curve, then indicates the economic life period for the particular conditions and assumptions made.

This time is necessarily that ordinate on the horizontal time scale, at which the two curves are farthest apart. In Figure 4, this is found to be 11½ years, and the interval between the two curves with reference to the value scale along the vertical axis, is found to be 35 cents.

The ordinate representing maximum profit, intersects the acres-per-well curve at 5 acres per well, as shown by projecting horizontally to the acreage-per-well scale along the right-hand vertical axis. All of this means, for the particular condition assumed in Figure 4, that a maximum average profit of 35 cents per barrel can be realized from the production of this property, if it is exploited by a system of wells spaced in such a way that each drains 5 acres; and that with this spacing, the property will be exhausted in 11½ years.

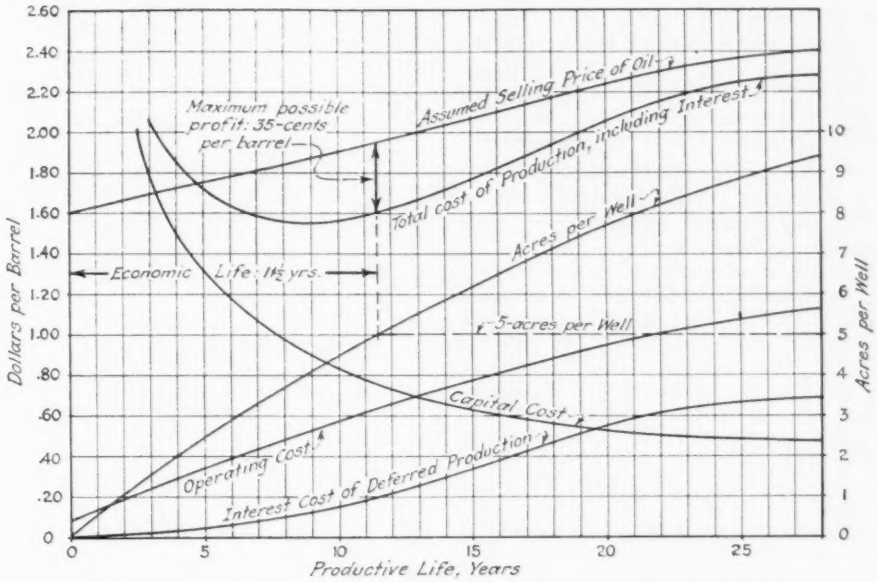


Fig. 4—Illustrating graphic solution of economic life problem

Economic Life of Physical Plant

All physical plant deteriorates with age, and as it ages, larger and larger sums must annually be expended in maintaining it in operating condition. The first cost of each plant unit is conveniently written off as "depreciation" month by month, in equal installments according to the "straight-line" method, as described in an earlier article of this series.[1] As maintenance charges increase, there comes a time when it is cheaper to discard the old plant unit and substitute a new one which will have a lower maintenance cost. Gillette[3] has shown that this critical point marking the limit of economic life of a plant unit is reached when the annual depreciation charge, plus the total of the annual maintenance charges, divided by the number of years of service, reaches a minimum value.

Figure 5 illustrates a convenient means of graphically recording the annual cost of repairs for a particular plant unit, and of displaying the value of the relationship defined by Gillette as it diminishes to a minimum value and then increases, thus determining the critical point at which time the plant unit should be replaced. In determining the proper depreciation rates to apply, it will be necessary to forecast the period of economic life as nearly as may be possible. This may be done by plotting the annual maintenance charges for a few years, until the trend can be ascertained sufficiently well to extrapolate the annual repair graph on into the future.

From the future prospective maintenance charges thus estimated, it will be possible to compute the values of $\frac{C+R}{Y}$ and plot the curve of this function on into the future to its intersection with the maintenance cost line. The ordinate through this point, projected vertically to the scale along the horizontal axis, indicates the economic life period of the plant unit. In Figure 5, for the values assumed, the economic life is ten years. Maintenance charges for physical plant do not necessarily follow the straight-line relationship as indicated in Figure 5, though this is often approximately true; but the same principles apply in any case, and if the growth in annual repairs follows any regular law, it should be possible to extrapolate it whether it is a straight line or a curve.

Standardized Unit Costs

ACTUAL cost data will be of interest only as a record of accomplishment on a particular property, where a definite set of conditions prevail. This however, is only a part of the function of cost records. To serve

2. Uren, L. C., "Estimating the Economic Life of Oil-Producing Properties," Oil Field Engineering, November, 1926, pp. 49-52, 86-88.

3. Gillette, H. P., "Hand-book of Cost Data," M. C. Clark Pub. Co., 1910 edition, p. 27.

their full purpose, they must also be of assistance to the engineer in predicting costs in like work in other regions and at other times, where dissimilar conditions may prevail. This will be possible if the data in each individual case are reduced to a standard basis of comparison. With an adequate reservoir of standardized unit cost data, covering the cost of work done under a variety of working and physical conditions, it should be possible for the engineer to predict with fair accuracy what the cost of a proposed project will be under any conditions that may be imposed.

VARIATION in the cost of labor and supplies in different periods and in different regions, must be reconciled in reduction of absolute costs to unit costs. For example, in comparing the cost of drilling a well in 1910 with the cost in 1928, it is obvious that some readjustments must be made in one case or the other—or, perhaps, in both—to allow for the advance in labor and material costs that has occurred since 1910. The cost of drilling in Burma, with cheap native labor and high material and equipment cost, cannot be compared with the cost of drilling in the Pennsylvania oil fields where radically different wage scales and commodity prices prevail, unless appropriate readjustments are made in the recorded cost data. Such changes as are necessary to reduce actual cost data to a standard basis at which all costs are really comparable, may be conveniently made by adopting a standard wage scale and standard commodity values, and applying index numbers to the actual costs to reduce them to the assumed standards.

Figure 6 shows how commodity values in the United States have varied since pre-war time. The dollar in 1926 was worth only about two-thirds as much in average purchasing power as it was worth in 1913. Obviously, the cost of drilling a well under a given set of conditions, was higher in 1926 than in 1913, but we might arrive at an approximate estimate of the cost in 1926 from a cost record assembled in 1913, by dividing the 1913 values by 0.66. In the same way, we might adjust for differences in wage scales in 1928, as between Burma and Pennsylvania, by assuming the Pennsylvania costs to be standard and multiply the Burma drilling costs by an appropriate factor, or "index number," which will properly express the difference in wage scales in the two regions, as well as the relative efficiencies of the workers.

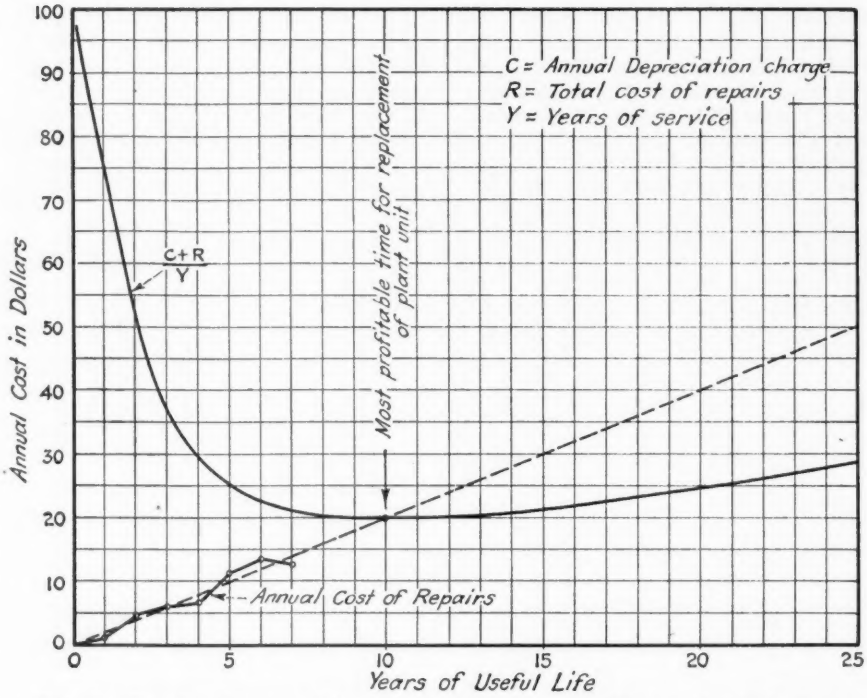


Fig. 5—Graphs showing determination of economic life of physical plant

The high cost of materials in some inaccessible region may be similarly compensated for in reducing the costs to the standard basis, by multiplying the actual costs by an appropriate factor. The factor or index number to be used, will always be less than unity if actual costs are higher than the assumed standard, and greater than unity, if less than the standard.

Engineers and executives of oil companies operating on an international scale in many different regions, will have no true basis of comparison unless the company records, as maintained in the headquarters offices, are reduced in this or some similar way, to some standard basis of comparison.

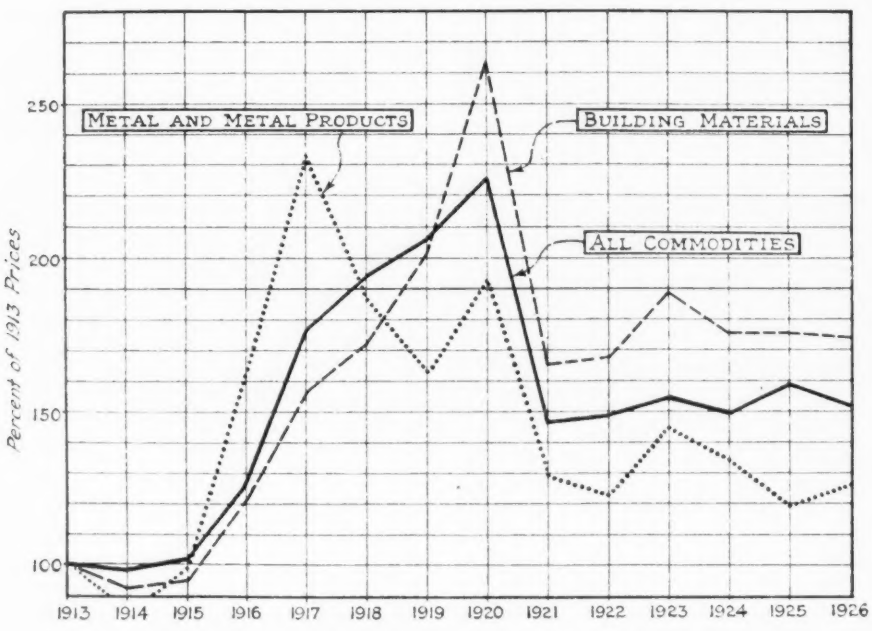


Fig. 6—Index numbers of wholesale prices of commodities, 1913-1926. *(By U. S. Dept. of Labor)*

IN DEVELOPING appropriate cost units for comparative purposes, or in assembling data to be used in predicting costs on new work, particular thought should be given to the adoption of units that are truly comparable. The cost per well per day is a convenient unit for comparison of well operation efficiency, but the cost per barrel of production may be almost meaningless. Even the cost per well per day should, strictly speaking, be qualified by some factor expressive of the depth. The cost per day per hundred feet of depth, would perhaps, be a more appropriate unit. The cost per foot of drilling must be qualified also, by a factor allowing for the depth at which the drilling is done. Freight is moved not at a cost of so much per ton,

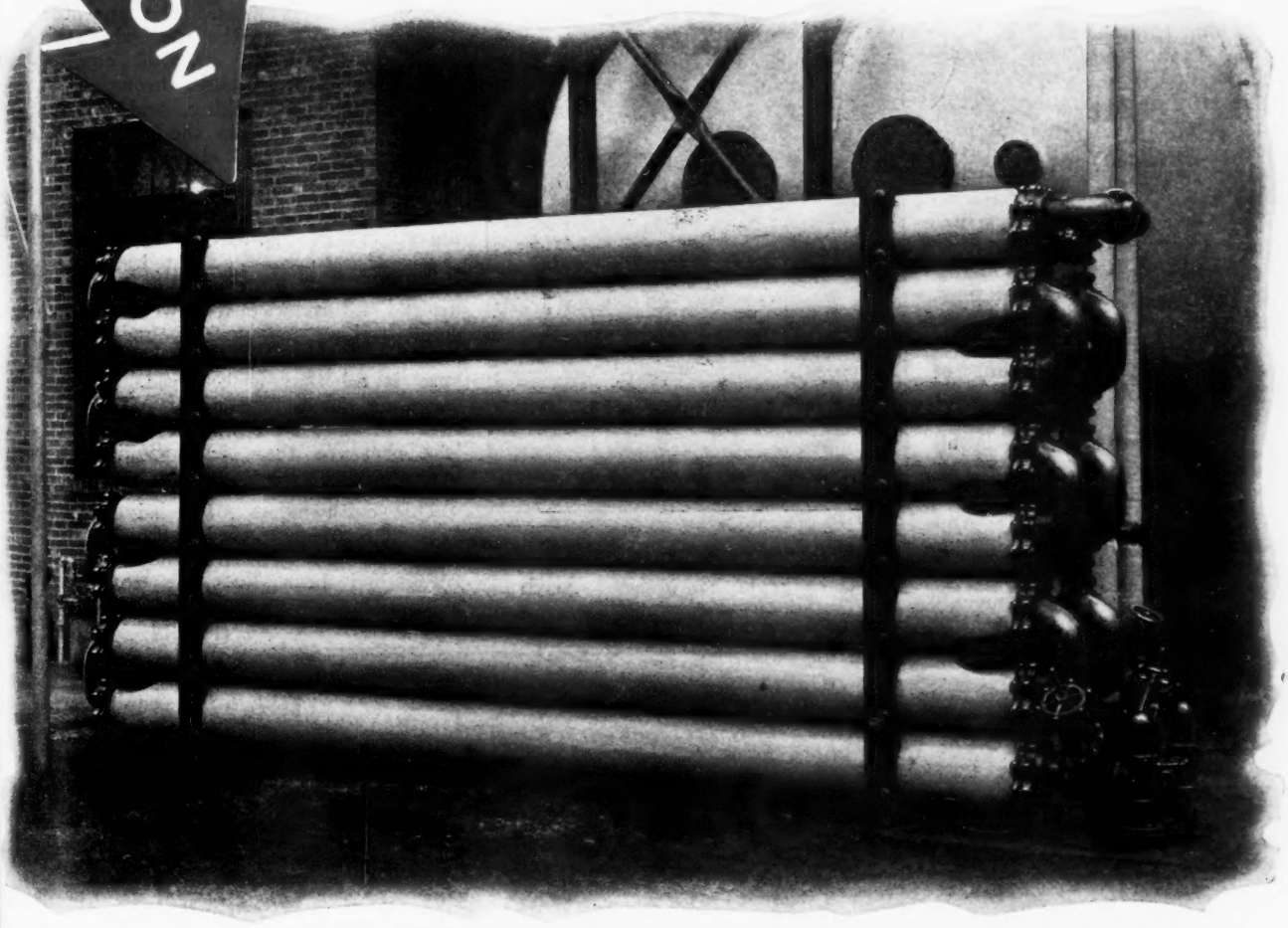
Multitube Heat EXCHANGER

Vogt Multitube Heat Exchangers can be successfully applied wherever it is desired to save losses or reduce costs by conserving heat through exchange of temperatures between gases and liquids.

A detailed description of Vogt Multitube Heat Exchangers is given in Bulletin HE-1. We will gladly send you a copy.

LATION

Illustrations through courtesy of Louisville Refining Co. Read the article in the January issue of "The Refiner" on page 75 which describes this unique Installation in detail.



Manufacturers of Drop Forged Steel Valves and Fittings, Oil Refinery equipment, Water Tube and Horizontal Return Tubular Boilers, Ice and Refrigerating Machinery.

but rather at a cost of so much per ton-mile.

The unit cost of pipe welding should not be the cost per linear length of pipe line, for the cost varies with the pipe diameter and the length of joints. Rather, the unit cost should be expressed as the cost per linear unit length of welded metal joint. Similarly, for every operation, there is some one unit which best expresses the cost for comparative purposes. It will be the task of the engineering cost keeper to determine these most expressive units, to develop the most appropriate index numbers, and apply them in reducing the primary cost data to the adopted standards of comparison.

Summary and Conclusion

This, the concluding article of a series of six, reviewing the principles of cost accounting and describing their application in the business of oil production, has been devoted to a brief description of a few applications of primary cost data, as an aid in the solution of typical problems of importance in oil production engineering and property management. The scope of the present article has permitted of describing but a few of the many applications of engineering cost data in the oil-producing industry.

EARLIER articles have discussed the purposes and requirements of cost-accounting as applied to oil production; methods of cost-accounting for labor, supplies, power and indirect expense—the primary cost elements; the principles of depreciation and depletion as applied to oil field plant and property; and descriptions of typical cost records useful in displaying the cost of conducting the various departments and divisions of an oil-producing company's activities.

Every oil-producing company should maintain a cost-finding department employing individuals skilled in this class of work to develop and maintain appropriate cost records and interpret them to the management. Few American oil companies appear to have developed their cost-keeping departments to such an extent as would be desirable in their own best interests. Cost accounting is not merely a recording of past results and achievements. When developed to its proper place in the oil company organization, cost accounting earns dividends by disclosing avoidable waste and by pointing out where operating economies may be realized.

Breaks Out Well With Low Pressure

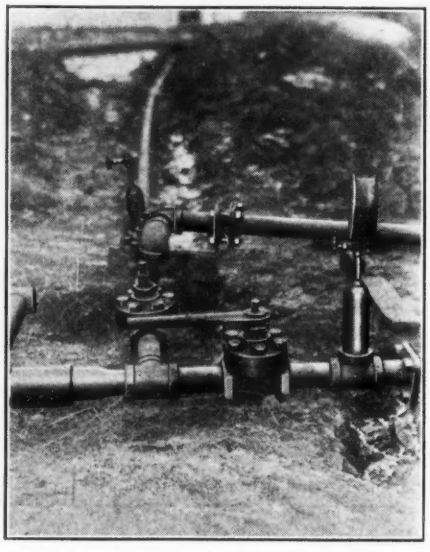
By John Power
N. P. N. STAFF WRITER

A NEW method for breaking out wells produced on the air lift has been evolved. It does away with the high pressures such as are ordinarily required to start flowing wells with long columns of fluid. Combining the features of oil circulation and the gas lift, its operation is as simple as the installation. Tried as an experiment on a stubborn well, the method has been perfected and patented by Charles Jacobsen, production superintendent for the Barnsdall Oil Co., and Lloyd Summers, gas lift engineer with the same company.

With the new method it is possible to break out a well and start it flowing with a pressure of about 50 pounds above ordinary working pressure, regardless of the amount of fluid in the hole. Only about 35 barrels of oil must be introduced into a well with the gas and this is all recovered.

The installation of the device, or method, is extremely simple. Any high pressure pump, capable of handling oil at pressures up to 500 pounds, is installed in some convenient place on the lease. The output line from this pump is tied into the output line from the compressors to the wells, using high pressure tees to make the connections.

Pressure gages are installed on both the oil line and gas line where they will record the pressures built up in the lines before the oil and gas join. Gate valves, which are easy of operation, are installed ahead of these gages, quite close to the junction of the oil and gas lines. The operator then turns oil into the well which he desires to kick off, the oil coming from the stock tanks, through the pumps, down the tubing, and up the annular space between the tubing and casing back into the stock tanks.



Photograph showing connections between oil line from stock tank and gas lines from compressors used in the circulating system

At the start, slugs of gas are admitted with the oil. Gradually the amount of gas is increased until the whole fluid column is aerated, and the well begins to flow. Where it is desired to break out a well in less than an hour, about 50 pounds pressure above the ordinary working pressure is all that is required. Where the time element does not enter into it, wells have been made to flow with less pressure than was required to keep them flowing.

This method has many advantages over the old methods of "pouring it on her" until such tremendous pressures had been built up that the well had to flow. Building up extremely high pressures is hard on the compressor equipment, particularly the valves. Again, it is seldom that the wells can be made to flow as quickly by the high-pressure method as they can by the circulation method. As an aid to the Sunday shut down method of restricting production, the de-

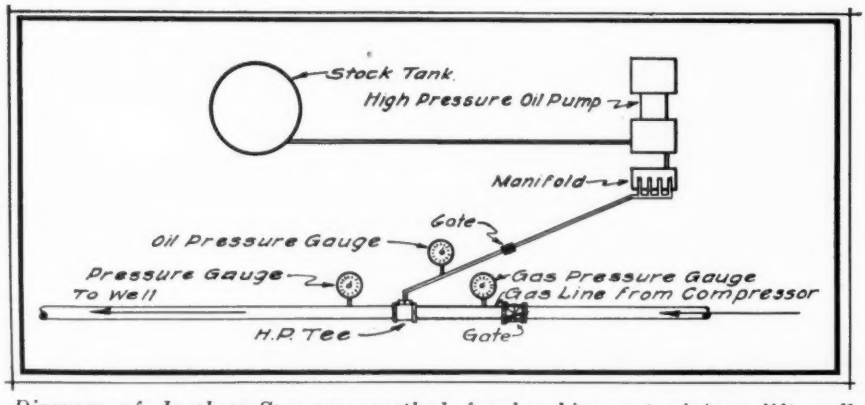


Diagram of Jacobsen-Summers method for breaking out air/gas lift wells which have been off production

vice is extremely valuable, as it is possible to shut down and start up with little lost time, and at no strain on equipment.

It is possible to manifold the output from the oil pump so that several wells can be connected into the same installation. When this type of hook-up is used, it is possible to equip four wells with this method of breaking out for between $3000 and $3500 over all, or at less than $1000 per well. Many operators already have equipment on hand which will do the work satisfactorily, as any pump which will handle oil at about 500 pounds pressure is satisfactory. Several other companies besides the Barnsdall have adopted this method of breaking out their wells, and so far, none have a failure to report.

Whisky Island's Only Producer Padlocked

CLEVELAND, March 2.—Prohibition has clamped down on Whisky island's only oil well on Cleveland's lake front. A five-barrel producer is to be plugged so a dock, considered far more profitable than a five-barrel producer of Ohio oil, can be built over it. The plugging is not a conservation movement as this well never was accused of breaking a crude oil market.

Appeal for a well plugger was made a few days ago to Paul Ryan of the by-products department of the Shell Petroleum Corp., St. Louis, who was in Shell's Cleveland office. As well pluggers are not common in these parts some canvassing was necessary to find one to do the job.

Whisky island, which was named when the name implied the nature of the business done there, also contains a gasser. The wells are in a shale formation.

Gulf Is Selling Aluminum Chloride

PITTSBURGH, Feb. 28.—Charles B. Buerger, vice president of the Gulf Refining Co., states that the company is now accepting orders for commercial anhydrous aluminum chloride. The price is given as 5 cents a pound in carload lots and somewhat higher in smaller quantities, Mr. Buerger says. The Gulf manufactures aluminum chloride for use in its aluminum chloride cracking process at Port Arthur. It is not believed that any other refiner is using this process.

CLEVELAND, Feb. 28.—William A. Haven, for the past 10 years connected with The Republic Iron & Steel Co. of Youngstown, O., as superintendent of blast furnaces, has resigned to become associated with Arthur G. McKee & Co., engineers and contractors Cleveland, as vice president.

American Petroleum Institute Adopts A.S.T.M. Methods

ANOTHER step, and a long one, toward standardizing tests and methods of testing petroleum products was made when the executive committee of the American Petroleum Institute, meeting in St. Louis, Feb. 12, approved 21 of the tests of the American Society for Testing Materials. The tests thus also become A.P.I. tests and testing methods, which would seem to be an added reason for their universal adoption by our industry.

The action of the committee was on recommendation of the Institute's General Committee on Refinery Technology. The tests approved are:

D 206-25—Abridged Volume Correction Table for Petroleum Oils.

D 128-27—Analysis of Grease.

D 187-27—Test for Burning Quality of Kerosene Oils.

D 219-27—Test for Burning Quality of Long-Time Burning Oil for Railway Use.

D 239-27—Test for Burning Quality of Mineral Seal Oil.

D 189-28—Test for Carbon Residue in Petroleum Products (Conradson Carbon Residue).

D 97-28—Test for Cloud and Pour Points of Petroleum Products.

D 86-27—Test for Distillation of Gasoline, Naphtha, Kerosene, and Similar Petroleum Products.

D 216-27—Test for Distillation of Natural Gas Gasoline.

D 56-21—Test for Flash Point of Volatile Flammable Liquids.

D 93-22—Test for Flash Point by Means of the Pensky-Martens Closed Tester.

D 92-24—Test for Flash and Fire Points by Means of Open Cup.

D 158-28—Testing Gas Oils (Gravity, Distillation, Sulfur, Carbon Residue, Pour Point, Viscosity, Water).

D 87-22—Test for Melting Point of Paraffin Wax.

D 94-28—Test for Saponification Number.

D 157-28—Test for Steam Emulsion of Lubricating Oils.

D 129-27—Test for Sulfur in Petroleum Oils Heavier than Illuminating Oil.

D 240-27—Test for Thermal Value of Fuel Oil.

D 88-26—Test for Viscosity of Petroleum Products and Lubricants.

D 95-28—Test for Water in Petroleum Products and other Bituminous Materials.

D 96-28—Test for Water and Sediment in Petroleum Products by Means of Centrifuge.

In addition to approving the A.S.T.M. tests, the executive committee approved a "Suggested Good Practice for Safe Loading and Discharging of Oil Tankers" subject to certain changes to be made by the Institute's General Committee on Fire Prevention. It approved the cooperative work of the fire prevention committee with the National Fire Prevention Association concerning safety features of tank trucks.

The committee also approved, subject to certain changes to be made by the General Committee on Corrosion, "A Tentative Code for the Field Application of Hot Bituminous Coatings."

New Shell Company to Run New England Refinery

CLEVELAND, March 1. — Shell Eastern Petroleum Products, Inc., is the newest member of the large and widespread family of the Dutch Shell interests. It is a new subsidiary of the Shell Union Oil Corp., just organized to take over the business of the New England Oil Refining Co. The Shell interests recently bought the 3500-barrel refinery of the New England Oil Refining Co. at Fall River, Mass.

The headquarters of the new company will be at 141 Milk street, Boston, it is announced, and its business will cover the new England territory formerly served by the New England Oil Refining Co., and also all the northeastern Atlantic coast states.

A. F. Carter, who has been president of the New England Oil Refining Co. is president of Shell Eastern Petroleum Products, Inc. W. J. Filer, who is very well known to refiners and marketers through his long connection with the Shell Petroleum Corp., St. Louis, becomes vice president in charge of sales of the new company. T. S. Marshall has been transferred from the Shell headquarters in St. Louis to become advertising manager.

It is stated that the personnel of the New England Oil Co. has been very largely taken over by the new company.

The properties acquired by the new Shell company include an extensive retail marketing system covering many parts of New England. The company will distribute in the New England territory the regular Shell trade marked products, 400 Extra Dry gasoline, Super Shell gasoline, Shell motor oils and the rest of the line, as well as fuel oil.

Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

THE best way to settle a troublesome problem fairly is to get everybody concerned together in a room—not too big a room—where each can frankly present his case and advance his arguments and objections and the whole matter can be thoroughly thrashed out.

This is what the American Petroleum Institute proposes to do by calling a meeting in the Willard Hotel, Washington, D. C., March 15, to consider the changes the Federal Specifications Board proposes to make in the U. S. Motor gasoline specifications and the specifications for a new high volatility gasoline it is proposed to establish for purchase by the government for special uses.

This is an excellent way to handle the matter. It is stated in the announcement of the meeting that the members of the Federal Specifications Board and of the Technical Committee on Lubricants and Liquid Fuels have been invited to be present. Also, all refiners are invited to be represented.

The members of the technical committee are government technologists who advise the specifications board from a practical and engineering standpoint. The technical committee members understand the problems of the refiners and the needs of the government.

It would seem that every refiner in the country might well be represented at the meeting, either by himself or one of his operating men or a technologist of his association. At least, the refining groups from each section of the country, who have similar problems, should be well represented by men fully competent to set forth the conditions and limitations under which each group must operate, the character of their respective crudes, and so on.

Unless it is fully enlightened, the board by its specifications may work injustice on some group of refiners. It is believed, however, that the government intends to be fair and will not fly in the face of the interests of our industry, provided it is informed as to what those interests are.

* * *

MORE confusion is arising over methods for testing paraffin wax. Many buyers purchase their wax on the A. S. T. M. melting point test. Many refiners test their wax by the so-called American melting point method which is supposed to run some 3 degrees below the A. S. T. M. figures. This is enough to suggest the grief that often arises between buyer and seller.

A company, evidently a large buyer of paraffin wax, wrote in to me as follows:

"We believe an effort should be made to stabilize the melting point on the A. S. T. M. method, inasmuch as it gives the true melting point on the entire wax, whereas the A.m.p. method merely gives the melting point of the highest testing wax in the mass.

"There are some waxes that have a range of melting point of almost 4 degrees, while others will break sharply at 2 degrees. You can readily see that the user of this wax for candles is really interested in the lowest range instead of in the highest one, inasmuch as the candle will soften as it approaches the lowest melting point.

"As to whether or not this would be fair to the manufacturers of wax we believe is immaterial, inasmuch as one melting point will give constant materials and give a true comparison provided they all use the same melting point and will save considerable confusion in sales."

It would seem that the writer quoted is right. Uniformity is a most desirable factor in testing. If everybody uses the same method and the same standardized apparatus for testing, and uses them carefully, the chances for disputes over quality of products will be much reduced.

The writer mentions the manufacture of candles as one industry that wants the lowest melting point determined. How about manufacturers of wax paper and so on? Are their problems the same as those of the candle manufacturer?

Every month some progress is being made toward standardization of tests, testing methods and testing equipment. Gradually the A. S. T. M. methods and apparatus are becoming standard the country over.

* * *

BIGGER and better phase cracking units are the style now. Word comes that the Magnolia Petroleum Co. is installing four Cross cracking units with a capacity of 3000 barrels a day each at its Beaumont, Tex., refinery. The Itaca company, Argentina, also is constructing a 1000-barrel Cross unit. The 3000-barrel unit is the biggest I have heard of. Both jobs are being handled by M. W. Kellogg Co.

* * *

HOUSTON OIL CO., Camden, Ark., I am told is installing a 3500-barrel pipe still for crude distillation and a 1000-barrel pipe still for rerun work.

* * *

IT SEEMED to me in reading the interesting paper, "Fuel Oil Constitutes Safety Valve of Petroleum Industry," presented by Charles J. Deegan before the A. I. M. E. meeting in New York and published on page 84 of the Feb. 27 issue of NATIONAL PETROLEUM NEWS, that the author had failed to consider one important point. That point is the greater anti-knock value, generally, of cracked gasoline as compared with straight run gasoline.

Mr. Deegan points out that in time of low market prices for gasoline, the refiner should supply that market by straight distillation of crude and sell his fuel oil in competition with coal, rather than flood the market with gasoline from cheap fuel oil.

It seems to me that if all refiners or even a large number, followed that policy, some of the newer automobiles would find themselves in considerable trouble from knocking unless they used Ethyl gasoline or a benzol blend or some other special fuel.

In other words, would not the general anti-knock value of the gasoline marketed the country over go down appreciably as a result of such a policy as Mr. Deegan recommends?

Many Short Steps, Not Long Strides Marked 1928 Refinery Progress

By H. W. Camp*

Presented at Annual Meeting A.I.M.E., New York, Feb. 20-21

THE past year has had no revolutionary change in the process of petroleum refining; however, there have been improvements and developments in practically every phase of operation, due largely, perhaps, to economic pressure.

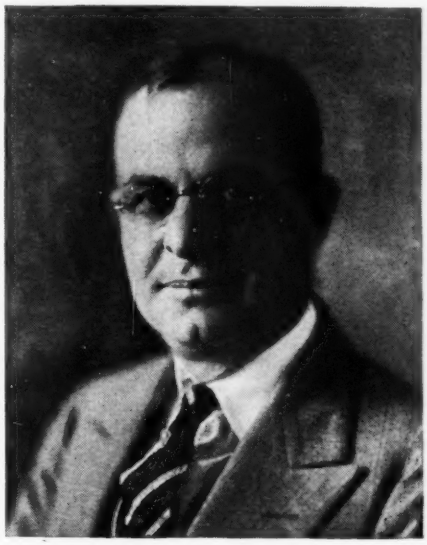
A few years ago, a Mid-Continent skimming plant using 35 gravity crude, obtained 28 per cent gasoline and naphtha; 9 per cent kerosene, and the remaining yield gave gas oil and fuel oil. Figuring manufacturing cost, but not including sales, transportation, overhead and depreciation, the realization was $1.45 per barrel of crude. Today, a thoroughly modern and up-to-date skimming plant having all latest equipment, shows a realization of $1.74 per barrel on the same basis. Thus, it is evident that progressive developments have taken place in the last 2 or 3 years when potential earnings have been increased about 20 per cent.

The average refiner is compelled to exert his utmost ingenuity in order to operate with a profitable margin. He has two factors to consider—recovery of maximum yields of profitable oils and the reduction of operating expenses.

For the past 8 years, the margin between price of gasoline and cost of crude has grown narrower, constantly. Both these prices are determined by external conditions and not by the refiner himself; however, the refiner might have been able to increase that margin had he more carefully controlled his output, limiting his production of light oils to current consumption.

Be that as it may, this same economic pressure has given impetus to progress in improvements of primary distillation equipment, including stills, towers and heat saving devices. A pipe still and bubble cap fractionating equipment can now replace a battery of shell stills, giving better yields, better control, elimination of rerunning and lowering of operating costs. The most recent pipe stills are being equipped either with radiant heat furnaces or air preheating systems and improved heat exchange equipment. These can be operated on a fuel consumption as low as 1 per cent of the charge as compared to a fuel consumption of 3½ per cent of charge on shell still batteries.

Fractionation is now so controlled that almost any separation desired



H. W. Camp

can be effected in one operation. Streams can be separated so that only a portion of the products will require treating or can be divided so as to retain antiknock properties and at the same time, eliminate gum-forming substances.

It is sometimes uneconomical to write off a big investment of shell stills. Instead of abandoning these, it has been found profitable to equip them with air preheaters, improved furnaces, bubble cap towers and heat exchangers so that their efficiency may be comparable to pipe still installations. A recent development in shell still design is the addition of interior tubes with suitable headers which has improved the efficiency and presents a further possibility of utilizing old shell still batteries profitably.

There have been no recent marked changes in methods of treating in general but many improvements have been made and several new processes have been developed for special classes of oil. There is a tendency toward the installation of continuous treating systems in preference to batch agitators. The adoption of recirculation in agitators has made a big improvement in batch treating. Regeneration of caustic is employed and the material is re-used until causticity is as low as 2 per cent. Acid recovery systems are used which recover as high as 80 per cent of the acid, and even the litharge for sweetening gasoline is recovered many times over.

Operating expenses have been cut materially and refinery efficiency increased because of several factors, such as (1) better boiler house practice and more efficient boilers; (2) production of dry and superheated steam; (3) utilization of exhaust steam and feed water treatment. (4) One of the present practices is the installation of higher steam pressure boilers in connection with bleeder type turbines which enables the refiner to generate his electricity for refinery use at practically no added cost, as well as utilizing the same steam for regular processing. (5) Another innovation, so far as refineries are concerned, is water-cooled walls in boiler settings, thereby increasing materially the rating of the boiler. Acid sludge is now used for fuel while heretofore it was not only a waste product but also a nuisance.

Losses have been decreased through the installation of vapor recovery systems, vapor-tight and floating roofs, acid sludge and B.S. recovery systems, and improved methods of loading and unloading volatile oils. Vapor recovery systems gather gases from stills, tanks, agitators and loading racks, then through an absorption process, recover about 85 per cent of the gasoline, the residue being burned for fuel.

THE largest single factor for the advancement of refinery practice is the pressure still. Add sufficient cracking capacity to a skimming plant, in order to convert the heavier fractions into gasoline, and the yield increases from 32 to 66 per cent. The realization from a barrel of crude, considering higher manufacturing expense, increases from $1.74 to $2.44 per barrel and the gallonage of gasoline from a barrel of crude is doubled. Without the advent of the pressure still, it is doubtful if the refiner could have kept pace with the rapid and tremendous increase in gasoline consumption.

Had the refiner attempted to increase his skimming facilities to meet the gasoline consumption, obviously the fuel oil market would have been glutted, hence demoralized. Three factors are responsible for the rapid and efficient development of the pressure still : (1) the necessity for securing ultimate yields for economic

*Refining Division, Empire Oil & Refining Co.

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NATIONAL TRANSIT
PUMP & MACHINE COMPANY
Oil City, Pa.

"What About The OILGRAM?"

—asked the executive of a gasoline company on the west coast recently of a Tulsa oil man. His answer was . . .

> "If you were to wire me for Mid-Continent gasoline prices today, I would phone a member of the OILGRAM staff, and my reply to you would be the *gist of what he told me.* The OILGRAM staff is in direct and close contact with the markets almost every hour of the business day. *They know their business.*"

You too, can have the benefit of this close contact with all phases of the market at all the principal refining and marketing centers.

The service costs only $25 a quarter, or $75 a year, payable in advance. Approximately 30 cents a day—less than the cost of one wire or one phone call.

Avail yourself of this fast, daily market service today—send your order with check to the nearest mailing point.

TULSA—904 World Bldg.
CHICAGO—35 East Wacker Drive
NEW YORK—342 Madison Avenue
CLEVELAND—1213 West Third St.

existence; (2) the necessity for increased gasoline recovery in order to stay abreast of the rapidly mounting consumption and (3) curtailment of the fuel oil market with consequent reduction of selling price. Wider natural gas distribution, particularly in the middle west, together with determined competition from the coal industry, has materially affected the fuel oil situation, and added a very strong incentive toward the necessity of obtaining the maximum yield from a barrel of crude by cracking.

IT IS doubtful if the crude oil producers took into account the fact a few years ago that the refiners had opened a way to doubling their gasoline yield by the installation of modern equipment. Neglecting the fact that one barrel of crude now produced the same amount of gasoline that two barrels formerly did, the producers maintained a steady increase in production so that when coupled with increased ultimate recovery, the production of gasoline far exceeded consumption and as a result, the oil industry passed through an era where there were no profits.

There have been no big innovations or radical changes in liquid phase cracking equipment during the past year or so. However, there have been many improvements and the present trend is toward larger capacity units, higher fuel efficiency, finishing gasoline direct from units and controlled operation so as to produce gasoline with better antiknock properties. Higher operating pressures, reduction of coke and fixed gases, retardation of corrosion and other problems are being worked out so that we may expect to see improvements. Methods are being developed to recover valuable by-products including alcohols, esters and various types of synthetic products.

Much progress has been made during the past year in the development of the vapor phase pressure still. Several workable processes have been developed and a number of commercial installations have been made. Gasolines having high antiknock properties are produced by this method. It is a fact that the vapor phase pressure stills produced a larger quantity of fixed gas. This gas has a large unsaturated hydrocarbon content which may be recovered and probably converted into valuable products through synthetic chemistry.

The recent production of crudes having high sulfur content has presented a new problem to the refiner by corrosion of his equipment; indeed, distilling equipment has been eaten up in a few months when distilling this crude. The refiner is attempting to combat this condition to the best of his ability by various methods such as pretreatment of crude with alkalis, injection of ammonia and caustic into vapor lines, condensers, exchangers,

towers and stills. Liquid caustic is added in rundown lines to eliminate corrosion in lines and tanks. Various types of leadclad roofs and coatings of protective paint are used in tanks. There is the possibility of the use of aluminum tanks for resisting corrosion as they are not affected by the various sulfur compounds.

The pressure still presents the most vital problem of corrosion in the refinery since there is not only the high cost of replacement to be considered but also the element of operating danger. Various methods of reducing corrosion in pressure stills have been evolved, as lime injected into charging stocks, the adaptation of various alloys in valves, lines, tubes and chambers, chief among these corrosion inhibitors being chromium and nickel. One of the outstanding developments of this year has been the development of non-metallic coatings for interiors of cracking chambers as well as liners.

Production of lubricating oils is another profitable phase of operation and one which balances out the refinery. The investment is high and the operation complex; however, the return is good and the price and consumption are fairly stable.

SEVERAL new features have come into practice in regard to the processing of lubricating oils in recent times. Vacuum distillation in all its aspects is probably foremost among these. For some time vacuum distillation has been successfully applied to batch shell stills in the production of asphalt base crude oils. The latest development has been to adapt the pipe still to vacuum still practice using suitable fractionating equipment designed to make as many cuts as desired. Overheating of oils causing breaking down is avoided in this type installation and maximum yields of lubricating oils are secured. A new development in vacuum still practice is the use of an indirect heating medium such as mercury vapor or diphenyl.

The atmospheric pipe still and bubble cap tower have been applied to the reduction of pressed distillate and the yields greatly increased. For some time the sulfur dioxide-treating method has been applied to light oils; however, lately this treating has been applied to lubricating oils manufactured from certain crudes with favorable results. Lately commercial production of wax-free oils or very low cold test paraffin-base oils, has been developed.

The refiner cannot claim all the credit for the development of improved equipment as the manufacturers themselves have contributed largely to this constructive progress. Cooperation and distribution of information between the refiners and equipment manufacturers has led to a better understanding of the problems involved and permitted of a much more widely spread utilization of up-to-date processing. Space will not permit the naming of dozens of improvements which are small and highly technical but which, nevertheless, have a vital part in plant operation. The development of the art of welding has played a very prominent part in the advancement of refinery technique since many pieces of equipment are in use which would be almost impossible to construct and maintain were old pipe-fitting methods employed.

One of the most interesting, if less specific, developments of recent times, is the stimulation of research—especially cooperative research. Perhaps the art of refining was much retarded by the rather futile method of independent research since much progress and effort were duplicated. The old way was to consider every development a trade secret while today the refining industry is considering programs of cooperative research to expedite the industry as a whole.

New Patents

February 19, 1929

Prepared by R. E. Burnham, patent and trade-mark attorney, Continental Trust Building, Washington, D. C., from whom copies may be obtained at the rate of 20c each. State number of patent and name of inventor when ordering.

REFINING

Installation and device for the distillation and depolymerization of liquid or liquifiable hydrocarbons—Adolphe A. F. M. Seigle, Paris, France. Filed Dec. 19, 1922. No. 1,702,275.

Process for refining mineral oils—Alexander S. Ramage, Detroit, Mich., assignor to Gyro Process Co. Filed Nov. 3, 1924. No. 1,702,313.

Process for refining oil—Eric T. Hessle, Lemont, Ill. Filed Mar. 12, 1926. No. 1,702,540.

Treating adsorbent materials—Robert E. Manley, Port Arthur, Tex., assignor to Texas Co., New York, N. Y. Filed Jan. 26, 1924. No. 1,702,738.

Process of Preparing Hydrocarbons—Frank A. Howard, Elizabeth, N. J. Filed May 28, 1923. No. 1,702,899.

PRODUCTION

Liner pump—Sumner B. Sargent, Jr., Los Angeles, Cal. Filed June 27, 1927. No. 1,702,-619.

1,702,680. Drilling jar—Paul Arbon, Tulsa, Okla., assignor to Paul Arbon & Co., same place. Filed May 5, 1925. No. 1,702,680.

MISCELLANEOUS

Dispensing-tank—Fred L. Hayes, Port Washington, N. Y. Filed Apr. 9, 1924. No. 1,702,-866.

Foreign Opportunities

Reserved information may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, and its district and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

36017.—**Match wax**, Buenos Aires, Argentine, purchase.

36034.—**Lubricating Oils**, Adana, Turkey, purchase.

36110.—**Paraffin**, Valparaiso, Chile, agency.

36120.—**Gasoline, kerosene and lubricating oils**, Marseilles, France, purchase.

36177.—**Gasoline and lubricating oils**, Bombay, India, sole agency.

36191.—**Gasoline, kerosene and paraffin**, Milan, Italy, agency.

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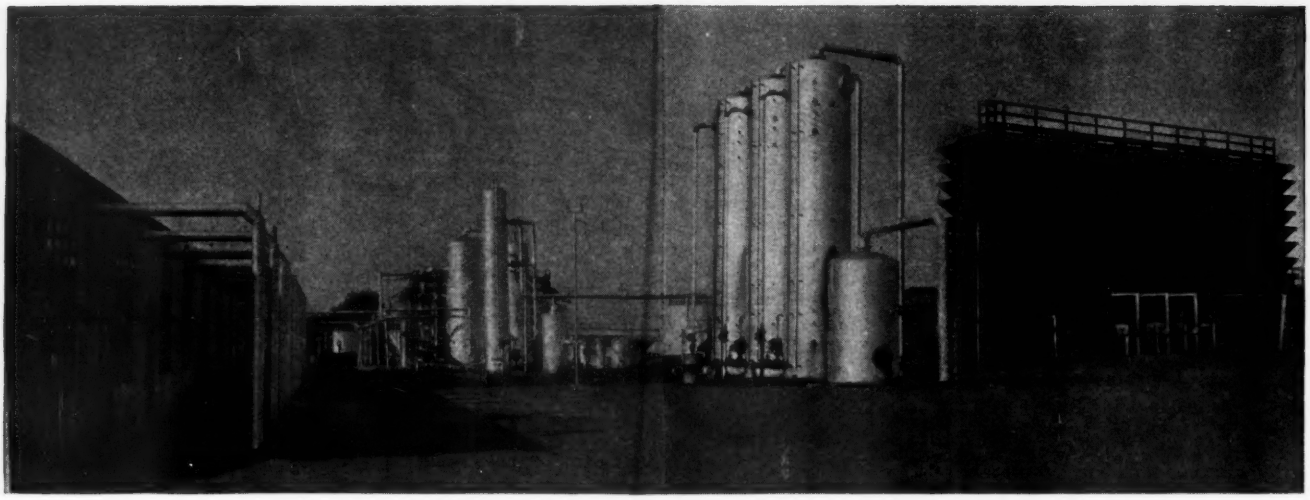

General view of Gillespie & Moran gasoline plant in the St. Louis pool

The Still Is the Most Important Part Of an Absorption Plant

By J. E. Kobernik*

Presented at Meeting of Plant Operators of Natural Gasoline Association, Ranger, Tex., Feb. 26

THE early stage of absorption plant development like most other pioneer developments was extremely crude, yet few industries have seen such rapid growth and in such a comparatively short time attained the high standard of efficiency, based upon scientific standards of measure.

The earlier still used in separating the gasoline fractions from the saturated absorption oil, consisted of a horizontal shell with live steam or exhaust steam blown into the oil as the sole source of heating.

Shells were later bricked in and fire was applied to the bottom as an additional supply of heat.

Both of the above however, were subject to excessive emulsion troubles, and were very unsatisfactory from the start.

Heat being a large factor in the distillation process, heat exchangers were applied to the plants next and as we all know, the operation became more economical.

Then came the "can tower." This was a vertical column filled with rocks or battered tin cans. This was used as a knock-out, sometimes called dephlegmator. As a cooling medium some used water in direct contact with vapors, while others introduced cool rich oil into the top of the column.

Next came the vertical still with a flash chamber and various types of grids and baffles. At about this stage of development, preheaters between the heat exchangers and the still were introduced and free of agitation steam admitted to the column below the flash chamber, usually direct into the body of the oil.

The vapors leaving the top of the column were cooled by being passed through suitable partial condensers or dephlegmators and the condensate was returned to the column with the enriched or fat absorption oil. This practice is still followed by quite a number. The separation effected is very poor and the return reflux tends to overload the still.

Still another development follows: The introduction of what may be called the overflow type tower. This consisted of plates, flanged and sometimes serrated. Part of these plates were anchored to the shell with the opening in the center and others were suspended from the shell with the openings at the outer edge.

The vapors rising through the column traveled through a descending rain of oil in its devious passage around the plates.

The usual dephlegmator such as has been mentioned was a common piece of equipment with this type of installation.

Bubble cap and perforated plate type strippers were next developed, and while this type of tray undoubtedly attained a higher plate efficiency than the overflow type, we cannot ascribe to this particular development anything more than mechanical improvements.

The old type dephlegmators were used and a definite separation of gasoline from the absorption oil was still an un-accomplished art.

This now brings us to a still later development of the distillation process. This step however, instead of having been approached from the mechanical efficiency standpoint, took into consideration the result of research work as well.

This research work has been conducted along various lines for quite some time by some of our most eminent men. The results have been gratifying and the data available at the present time make it possible to design with definite results as an ultimate goal.

AN IDEA of how crude the measure of efficiency must have been can be had when we look back and remember the day we hoped to be able to obtain 100 per cent of texts that are now being exceeded by over 100 per cent in some cases.

Our present analytical methods are not entirely what is desired, but an accurate idea may be had of what constituents and their respective proportions can be economically extracted in order to get maximum yield of desirable quality gasoline.

Naturally, when extracting all pen-

*Vice president and general manager, Engineering, Research & Equipment Co.

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REDUCTION OF PRESSED DISTILLATE
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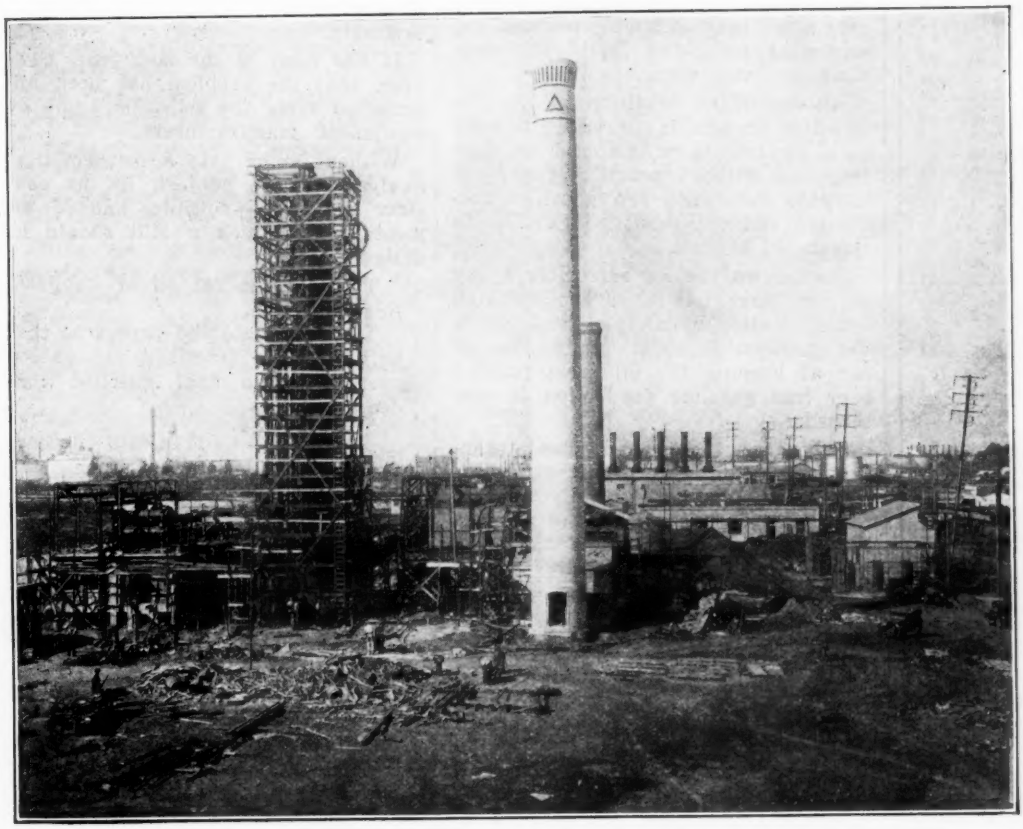

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Combustion

and power generation in refineries—27 articles in the past year have been published in NATIONAL PETROLEUM NEWS on this one angle of refinery operation.

Here they are for your file reference:

1929

How modern boiler plant increases efficiency Feb. 20, p. 57
Boiler plant burns acid sludge Jan. 16, p. 65

1928

Coke or acid sludge can be used for steam Oct. 24, p. 64
Recent developments in refinery combustion Oct. 17, p. 57
Quick action cuts loss when pipe still fails Oct. 3, p. 61
Refinery power plant gives 1 kw. per 9.4 lbs. steam per hour Oct. 3, p. 68
Cost of heat is what refiners should know Sept. 26, p. 78
Heat conserved with better fractionating equipment Sept. 26, p. 91
How a refinery cut costs to less than half Sept. 19, p. 22
Cut in refining losses offers profits June 20, p. 92
Cuts costs and loss by circulating systems June 20, p. 28
Refinery saves $80,000 yearly with auxiliaries June 6, p. 32
Fuels shell stills with powdered coke June 6, p. 25
Cutting costs in steam raising May 16, p. 49; May 9, p. 49; May 2, p. 17
New distilling equipment makes demands on refractories May 9, p. 76
Halves fuel costs with old shell still May 2, p. 81
Pipe still economy in making Penna. lubes May 2, p. 56
Efficient firing cuts fuel costs 1/3 Apr. 25, p. 63
New device to burn sludge coke Mar. 7, p. 101
Shell still as a big volume distilling unit Mar. 7, p. 60; Feb. 29, p. 63
Pipe still-tower can fit many purposes Feb. 29, p. 97
A.I.M.E. discusses combustion Feb. 29, p. 21
Screened radiant heat in refining Feb. 22, p. 70
Increasing still capacity without capital Jan. 25, p. 73

The above list of articles is for your convenience in locating them in your file.

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On numbers that are exhausted, we can have photostat copies made of the pages you wish at a cost of 40c per page, negative proof.

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tanes and heavier and any definite amount of butane from the gas, certain quantities of propane and lighter will also be extracted. These ratios are governed to some extent in the absorber, by the quality of oil, the temperature, pressure, design of the absorber, etc.

The composite product is then rectified and the undesirable constituents are rejected. This work is accomplished with a rectifying column.

The function of the still is to separate the gasoline fractions from the oil, determine the final boiling point of the gasoline and regulate the vapor pressure or the initial boiling point of the lean or stripped absorption oil.

THE idea at first seemed to be that to extract gasoline from gas was to contact gas and oil in an absorber, boil the oil in any kind of vessel, condense the off coming vapors, cool the oil and repeat the cycle.

Simple enough if the separation of dissolved light hydrocarbon constituents in heavier hydrocarbon constituents acted in such simple manner and separated from the liquid to vapor state and vice versa.

An important condition in the distillation process is to effect a complete separation of oil and gasoline fractions without permitting any oil to pass over into the gasoline production and to permit no gasoline to remain in the oil.

Should we use an extremely heavy oil, one that has a sufficiently high initial boiling point and end point, the problem is relatively simple as far as keeping the oil from passing over into gasoline production is concerned.

Laboratory tests and plant practice have definitely proven that lighter oils which do not actually contain the same constituents as the gas are better absorption mediums than the heavy oils commonly used.

Such oil might be defined in the following manner:

A.P.I gravity ..... 45°
Specific gravity ..... .8017 @ 60 degrees F.
Specific heat .... .54 @ 80 degrees F.
Molecular weight ..... 160 to 180
Specific density .... 6.675 pounds/gal.
Initial boiling point 350 degrees F.
Final boiling point 450 degrees F.

The general benefits of such oil, aside from its absorption qualities, are lower pressure drops through the heat exchangers, cooling coils and piping. Better heat exchange is also obtained, and lower oil circulation for the same purpose is required.

The vapor pressure of any hydrocarbon mixture is a total of the partial pressures of the various constituents.

The vapor pressure of the oil and gas approach equilibrium conditions to a relatively close degree in the modern absorber and it is of prime importance that the oil leaving the still should have a very low vapor pressure at absorber temperature.

The absorption and distillation processes are vapor pressure phenomena, and the limit of stripping of any constituent from the gas in an absorber is when the partial pressure of the constituent in the gas phase equals its vapor pressure in solution in the oil.

Returning to the vapor pressure of the lean oil, it is interesting to note that heavier constituents of gasoline can be present in the lean oil without affecting the vapor pressure of the oil to any appreciable extent, while a small percentage of lighter constituents may show a high vapor pressure lean oil. This might be a very interesting subject for a future paper.

The vertical steam still is best suited for economical construction and operation. Having gone through an evolution based upon operating experience, the average still now in use is a material improvement upon the originals.

It has been in the last year, however, that the problem has been approached from the scientific angle by equipment manufacturers.

Without going into a mathematical analysis of the subject, let us consider the basic principles and fundamentals for which a still should be designed.

To strip the fat oil of its gasoline fractions.

To fractionate the vapors so that only gasoline fractions are passed over into the final gasoline condensers.

IN A well designed column both phases may be accomplished, although the work of each phase is distinctly different.

A column capable of stripping the oil and also separating the heavier constituents from the vapors and permitting end point control of the finished product would consist of a stripper section and fractionating section.

The feed to the stripper is preheated so that most of the lighter fractions spontaneously vaporize in the compartment where the feed is introduced, and the heavier constituents of the gasoline remaining are differentially stripped out in the stripper.

Now let us see why and how differential stripping can be and is being done.

A definite relation of vapor pressure exists between fractions in the liquid phase and fractions in the vapor phase.

When the partial pressure of any fraction in the vapor phase is greater

than its vapor pressure in the liquid phase and the vapor is intimately contacted with, but not in equilibrium with the liquid, absorption will take place or the transfer is from vapor to liquid.

When the reverse conditions exist, that is if the vapor pressure of the fraction in the liquid phase exceeds the partial pressure of the fraction in the vapor phase, distillation results, or the transfer is from liquid to vapor. In the case of the problem under consideration stripping of the oil results.

JUST to make the term "vapor pressure" more easily understood, we will define the vapor pressure of any fraction as "a measure of its tendency to escape from the liquid into the vapor phase."

Steam introduced into hydrocarbon vapors reduces the partial pressure of the vapors.

When distillation takes place, the fractions vaporized cause a temperature drop absorbing specific heat equal to the latent heat of evaporation of the constituents vaporized. In the complete stripping of oil this heat loss must be supplied with additional heat to cause vaporization of the fractions which did not flash off in the spontaneous vaporization when the feed entered the column.

The most economical means to supply this heat is by the use of a steam heating element or coil in the lower part of the stripper.

While the ideal condition might be a heater coil upon each stripper tray, or a heater element near the top of the stripper and one at or near the bottom, yet when a sufficient amount of heat can be supplied at the bottom a temperature gradient is established throughout the stripper by the hot fractions rising from below.

Free or agitation steam is admitted, aiding the increasing temperature in stripping the oil.

In the bottom of the stripper the partial pressure of the gasoline fractions in the oil is very low; due to the small amount in solution in the oil.

The steam at this point is also in practically an unsaturated condition and reduces the partial pressure to a minimum. This condition permits fractions with low vapor pressure to migrate from the liquid to the vapor phase.

As the steam rises and becomes more saturated with hydrocarbon vapors, the partial pressure of the gasoline fractions in the liquid also increases and the migration from liquid to vapor continues throughout the stripper.

The upper section of the column consists of a number of plates. In this upper section the gasoline vapors are stripped of absorption oil.

Fractions in the liquid phase act

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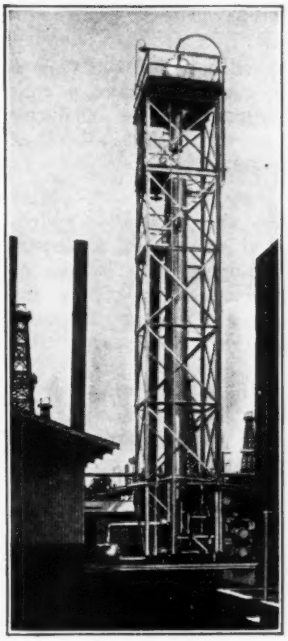

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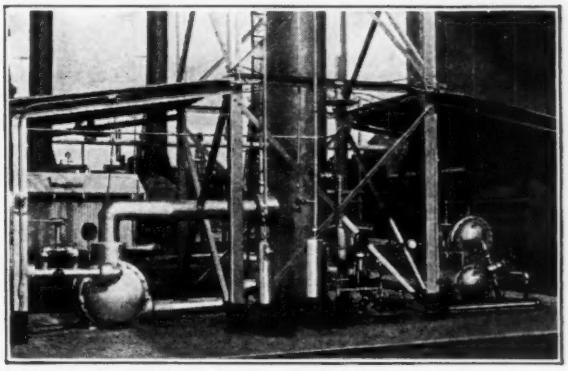

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as a solvent and fractions in the vapor phase act as the solute. Gasoline fractions in the liquid phase in the fractionating section absorb or saturate themselves with heavy constituents in the top of the column.

There is a temperature gradient through the fractionating section, being cooler at the top than at the bottom. As the reflux or backwash gasoline which is introduced as an absorption medium at the top, nears the bottom the temperature and partial pressure is such that gasoline cannot exist in the liquid phase and is revaporized, leaving the oil behind, or in other words, the vaporization of light fractions absorbs the heat from the liquid which in turn assists in condensing heavier constituents. The heavier fractions then pass to the stripper.

The intimacy with which the vapors and liquid are contacted have a considerable bearing upon the efficiency of a column provided that all other conditions are met.

Regarding the number of plates necessary, since the partially hydrocarbon saturated steam in a superheated condition enters the bottom of the fractionating section, plates for the thorough denuding of the descending reflux should be provided for. The superheated vapors effect distillation with a small amount of condensate at this point. This will permit an almost gasoline-free reflux to enter the stripper section.

The rest of the fractionating section must effect a complete washing of vapors so that only the desired gasoline fractions pass overhead.

The temperature in the upper part of the fractionating section under normal conditions is such that part of the steam is condensed. In a well designed column, the water is immediately withdrawn as water can not act as a proper vapor wash and should water flow downward with the reflux into the stripper section where the heat would cause it to vaporize, the result would be that the column would puke.

The size of a column, that is the stripper and fractionating section, must be designed for an adequate liquid capacity and vapor capacity.

The steam introduced for partial pressure is a considerable volume of the total vapors to be handled and it of necessity follows that for any given diameter column, the column requiring the least amount of steam will handle a correspondingly larger amount of gasoline vapors. This will reduce the size, cost and operating expense of a column for a given amount of overhead to be handled and will further reflect in a reduction of surface required for cooling and condensing.

In conclusion, the still is a more vital part of an absorption plant than the absorber as it is the unit which determines the quality of the oil which is permissible for use in an absorber. Upon it also depends the maintenance of the oil in its original condition.

NEW EQUIPMENT

Linde Air Products Co., New York, has put out a booklet on "Oxwelding Pressure Vessels." It states that more than 200 such containers have been constructed by oxy-acetylene welding during the past few years under the supervision of the company. Diameters of the vessels range from 3 to 8 feet and wall thickness up to 1¼ inches. The vessels have been designed for working pressures up to 300 pounds. Six factors to be considered in such work are given as follows: Determining the ability and knowledge of the welding operators; selecting material of good welding quality; correctly designing the vessel and welded joints; properly preparing the material for welding; applying approved welding technic; satisfactorily testing the completed vessel.

* * *

Merco Nordstrom Valve Co., Oakland, Calif., has placed on the market a large size plug cock, claimed to be of high efficiency and moderate cost. The valve is pressure lubricated, and the lubricant seals and lubricates the ground surfaces. These plug cocks are now available in sizes up to 30 inches.

* * *

International Derrick & Equipment Co., Columbus, O., has promoted Ray H. Pruitt, formerly manager of the company's branch at Tonkawa, Okla., to district manager at Wichita, Kan. A stock of equipment has been established recently at Valley Center, Kan.

* * *

The Hooker Electrochemical Co., 25 Pine street, recently completed what is said to be one of the largest chemical plants in the west at Tacoma, Wash. It has a capacity of 30 tons of 76 per cent caustic soda per day and 26 tons of chlorine. Electric power is received as alternating current at 13,000 volts, 4000 and 110 volts.

Storage tanks have a total capacity of about 2,500,000 gallons. The plant includes a two-story office, machine shop, locker room and loading platforms. It has railroad sidings and two docks, one 100 feet long and the other 300 feet long, for the load-

ing and unloading of barges and small boats.

H. M. Hooker, vice president, has general supervision of sales. A. H. Hooker, Jr., is sales manager of the Tacoma plant. Other officers of the company are: Elon H. Hooker, president; Willard Hooker, Harry M. Hooker and E. R. Bartlett, vice presidents. Mr. Bartlett is works manager of the Niaraga and Tacoma plants. L. A. Ward, is secretary.

* * *

Blackhawk Mfg. Co., Milwaukee, Wis., has developed three "Chief" sets of socket wrenches, of chrome vanadium steel, chromium plated, with the additional features of double hexagon and lock-on sockets, and special metal case of heavy gauge steel with two-tone crackle finish. These have been added to the regular line.

* * *

Heat Transfer Products, Inc., designer and builder of heat transfer apparatus, has become affiliated with the American Co., 30 Church street, New York City. The former company will utilize the manufacturing facilities of the American company for its line of heat transfer equipment for the gas and oil industry.

* * *

Pyrene Mfg. Co., 560 Belmont avenue, Newark, N. J., has appointed E. G. Weed vice-president in charge of sales and advertising. Mr. Weed was formerly for six years president and general manager of the Pyrene Mfg. Co. of Canada, Ltd., and has been with the National Carbon Co.

* * *

The recently merged Bennett Pumps Corp. here, and the Service Station Equipment Co., of Toronto and Bryan, O., have purchased the Republic Steel Package Co. of California, and the Shotwell Pump & Tank Co. of Boston, Mass.

Each company will retain its present manufacturing identity, the five companies together offering the trade one of the most complete lines of oil and grease handling equipment, including gasoline pumps, hand and power-operated metered systems, and piston type gasoline pumps, as well as the Eco air compressors, tire inflators and car washers.

Sales and service divisions will be organized in nine major points in the United States and Canada.

* * *

National Lead Co., 111 Broadway, New York, has put out a handsomely printed and bound booklet on "Recovery and Concentration of Sulfuric Acid." It describes the processes of reclaiming of acid from sludge and reconcentrating of it by the Simonson-Mantius vacuum process and lists a number of refiners who are using this system.

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By Roger B. Stafford
N. P. N. STAFF WRITER

A MERCHANDISING plan which binds manufacturer, dealer and customer together apparently for the joint benefit of all, is the plan which the Alemite Manufacturing Corp. designed and which won the commendation of the Ford Motor Co.

It was the merchandising plan and not the Alemite lubricant which was recommended to Ford dealers by the Ford company, the company emphasized in its letter of Feb. 15 to dealers by stating, "We again repeat that our company does not recommend any particular kind of grease or oil and we want it clearly understood that we are not recommending Alemite grease."

Although the Alemite company designed the plan which consists of eight direct mail pieces which dealers mail at intervals to owners of new Ford cars to sell lubrication service to the owners, other services obtainable at Ford dealers' service stations are prominently featured in the promotion literature.

The only thing the Ford company had to do with the plan was to recommend it to its dealers but the form and manner of recommendation were prepared for it by the Alemite company.

This recommendation was in the form of a portfolio containing samples of each of the eight direct mail pieces and a short talk about each piece and how the dealer can use it for his own profit and for the delight of his customers by making Ford car maintenance an easy thing, thereby increasing the pleasure of driving Ford cars.

How the Alemite merchandising plan, which Alemite called the Ford Recorded Alemite Service plan, functions, was outlined on page 29 of NATIONAL PETROLEUM NEWS for Feb. 20, 1929. Following is a summary of the outstanding features of the appeal to Ford car owners.

The first direct mail piece has this question on the address side of the four page folder: "Your New Ford . . Will you give it better care . . that assures Long Life and Lower Maintenance Cost?"

No mention is made of Alemite in the first page of the first circular. The text deals with the service to be found at Ford dealers' stations and its completeness, thus:

"The thoroughness of our Free Inspection Service has given you, we believe, an idea of our eagerness and ability to render superlative service on the Model A Ford—not only during the 1500-mile inspection period but throughout the year after year mileage built into this remarkable car."

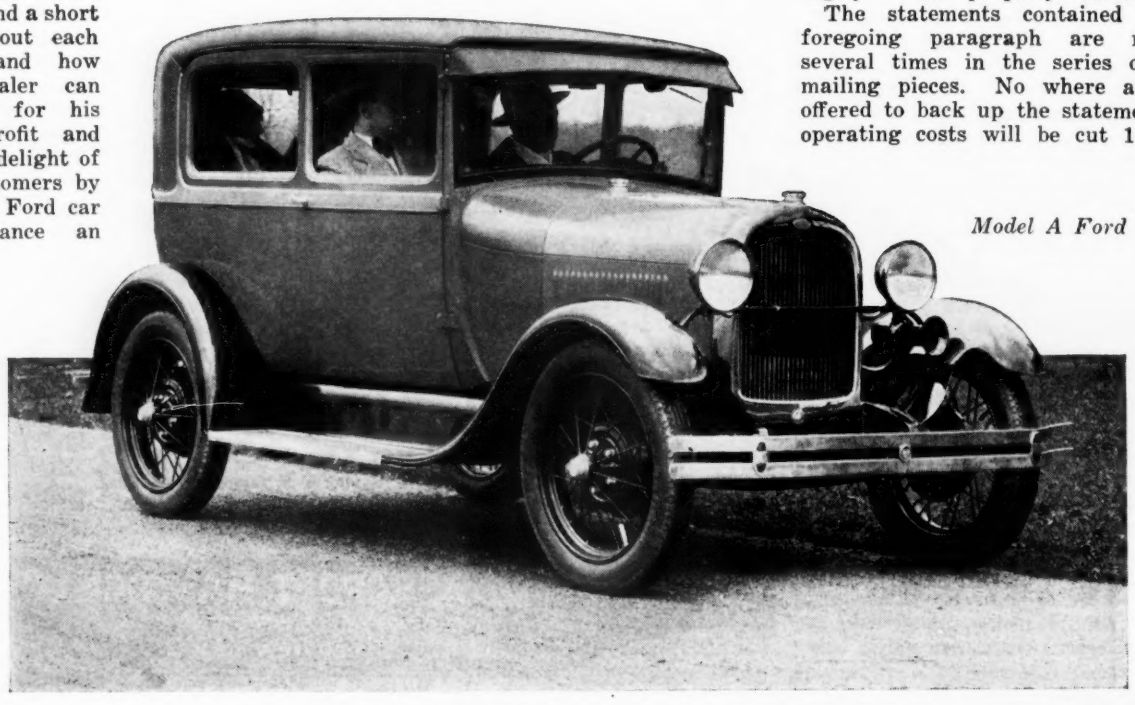
On page 2 of the initial circular the owner is stimulated to desire to give the very best care to his new vehicle. The quality of Ford station service is reiterated and the various services are outlined. These include washing, battery and tire service, adjustments, repairing, lubricating and inspection. In later circulars fueling also is mentioned.

On the third page of the circular the Ford Recorded Alemite Service of F.R.A.S. is introduced. At the top of the page is a scene in many colors in a Ford service station. In an orange panel beneath the picture is the following in large black type, "Genuine Alemite is forced to the heart of each of the 39 Vital Chassis Bearings by Up-to-date High-pressure Equipment."

This is followed with an appeal to the fear of the car owner: "One of the principal causes of repairs, high operating costs and excessive depreciation is improper lubrication. To protect you from the dangers of improper lubrication the Ford Motor Co. has equipped your new Ford with the Alemite-Zerk High Pressure Lubricating System which permits lubricants to be forced into the heart of every chassis bearing on your car. And now for your further protection we have inaugurated Ford Recorded Alemite Service. . . .

"It will save 80 per cent of ordinary repair bills—assure a quiet, freer running and longer-lifed car—cut operating costs anywhere from 1 cent to 1¾ cents per mile and save you all the worry and work of keeping your car properly lubricated."

The statements contained in the foregoing paragraph are repeated several times in the series of eight mailing pieces. No where are data offered to back up the statement that operating costs will be cut 1 to 1¾



Model A Ford

will be announced to the public

A radically new, different and better motor lubricant will soon appear . . . heralded by a comprehensive advertising campaign in newspapers, with posters, radio, signs, direct mail, hand-out literature and painted highway bulletins.

With this new lubricant, Mid-Continent Petroleum Corporation is the first on the market with a motor oil built to more than meet the requirements of the high speed motor! Comparative tests with competitive oils prove DIAMOND 760 to be far in advance in heat-resisting qualities. It is a lubricant without an equal . . . an oil for which there will be a large and immediate demand . . . an oil offering increased volume with consequently increased profits for jobbers and dealers.

Established DIAMOND distributors will greet DIAMOND 760 as the most sensational and progressive development in recent years. In territories not yet assigned, it is offered on the liberal DIAMOND exclusive franchise agreement.

Confidential, advance information as to what DIAMOND 760 is, what it will do, the meaning of the name, and full particulars, is available upon inquiry at any division office. For convenience, use the coupon!

MID-CONTINENT PETROLEUM CORPORATION
General Offices: Cosden Bldg., Tulsa, Oklahoma
Chicago Kansas City St. Louis Tulsa Waterloo

MID-CONTINENT PETROLEUM CORP.
Tulsa, Oklahoma

Please send me full particulars concerning your new DIAMOND 760 Motor Oil.

*Name*_____ N.P.N.

*Address*_____

*Town*_____ State_____

Sahara Air ... always!

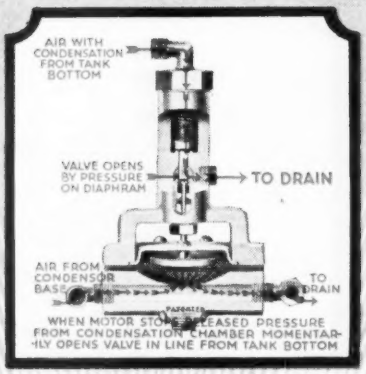
Dry Air Can't Freeze –

Constant, absolute dryness, so essential to air compressor efficiency, is automatically maintained under all weather conditions with the exclusive, patented ECO-MATIC Tank Drainer. Frost—sediment—moisture are forever banished. Air is always clean and dry.

The ECO-MATIC Tank Drainer is *entirely automatic* in its operation—positive—trouble-free. It keeps your air equipment at the maximum point of efficiency —*continuously* — cutting costs and expediting service.

SERVICE STATION EQUIPMENT CO., LTD.
Toronto, Ont.

REPUBLIC STEEL PACKAGE COMPANY,
Richmond, Calif.


AIR WITH CONDENSATION FROM TANK BOTTOM
VALVE OPENS BY PRESSURE ON DIAPHRAM
TO DRAIN
AIR FROM CONDENSOR
TO DRAIN
WHEN MOTOR STOPS RELEASED PRESSURE FROM CONDENSATION CHAMBER MOMENTARILY OPENS VALVE IN LINE FROM TANK BOTTOM

ECO-MATIC PATENTED
TANK DRAINER

The "most valuable air compressor improvement in years" is something you won't care to pass up.

Write for Compressor Bulletins!

Sign of Precision
Service Station Equipment Company
Precision Made
ECO
Automotive
Servicing Equipment
Bryan, Ohio, U.S.A.

cents per mile or that the Ford owner will be spared 80 per cent of ordinary repair expense by using the Alemite service. The circular closes with an appeal to the car owner to call at the dealer's station to have the service explained to him.

IN THE portfolio sent Ford dealers was this comment in connection with mailing piece No. 1: "First of all you want your new Ford owners to look upon your establishment as the logical place to come for service. This colorful announcement is designed to do that very thing in addition to launching the Ford Recorded Alemite Service plan.

"Already millions of dollars worth of future service is represented in the Model A cars serving the public today. You as a completely equipped authorized Ford dealer have a rightful claim to your share of this ever-increasing market. You have made praiseworthy efforts to assure yourself of these profits. You have had and will continue to have during the 1500-mile inspection period, an opportunity to make real friends of your Model A owner-customers. The most profitable thing that you can do now, therefore, is to keep that friendship and confidence firmly established and ever present in the minds of your customers.

"So the first piece in this direct mail campaign has been designed to promote that aim and to sell Ford Recorded Alemite Service as well."

On the address side of the second piece of mail matter is this injunction, "Keep Your New Ford Running Like New." On the first page is a picture of a Ford car instrument board with a large insert of a speedometer. In large red and black type is the following, "Every 500 Miles Halt! It's time for—" and turning the page the reader sees in red and black on a blue band, "Ford Recorded Alemite Service; it pays for itself many times over!!"

The text of the second piece is a consideration of that in the first and concludes with an appeal for the Ford owner to call at the dealer's station to have the new service explained to him.

In the third piece are given seven points of advantage of the F.R.A.S. as follows:

"1. Provides a certified history of lubrication which pedigrees your car and increases its resale value.

"2. Eliminates 80 per cent of ordinary repair bills, cuts operating costs anywhere from 1 cent to 1¾ cents per mile.

"3. Costs no more than ordinary greasing and pays for itself many times over with the money it saves.

"4. Keeps your new Ford new. Gives it longer life, halts depreciation, and adds to the joy of Ford ownership.

"5. Eliminates the guess and gamble of when and where to go for dependable, genuine, positive, methodical Alemite-ing.

"6. May be obtained from practically any authorized Ford dealer in any part of the country.

"7. Relieves you of all the worry and work formerly connected with your car's proper lubrication."

To the dealer this was addressed:

Lubrication Points on Model A Ford

HERE are the 39 bearing points shown on the Ford lubrication chart for Model A cars:

Two rear emergency brake cam shafts.
Two rear wheel bearings.
Four rear spring hangers.
Two foot brake cam shafts.
Two rear shock absorber connecting links.
Two emergency brake cross shafts.
One clutch pedal bearing.
One brake pedal bearing.
One universal joint.
Two clutch shafts.
Two drag links.
One steering gear.
Two front steering spindles.
Two steering spindles.
Two spindle connecting rods.
Two front brake shafts.
Four front spring hangers.
Two shock absorber connecting links.
One fan shaft.
One water pump.
One accelerator control shaft which is to be oiled.

"Ford R.A.S. keeps you in regular contact with your customers . . . brings them back into your service department where accessories, gas and oil sales and service work materialize. Even if it did nothing more, Ford Recorded Alemite Service would pay you big dividends.

"Obvious though it must already be, we say that the possibilities of Ford Recorded Alemite Service cannot be compared from the standpoint of lubrication alone. Yet the added profits this plan will bring to you through lubrication service will more than fulfill every expectation.

"THE real secret—the real outstanding merit of this plan, is, however, the fact that it will bring your Model A owner-customers to your service department at regular intervals. To do this—to bring your prospects to the source of service, accessory and gas sales is an achievement of inestimable dollars and cents value to you."

But it is in this third piece that Alemite lapses into the type of ad-

vertising that has characterized its national campaign. Under the caption, "The Importance of Proper Lubrication," it says in part:

"Cheap greases are usually full of soap, harsh fillers and fatty acids which literally burn up when bearings become heated. Some break down under pressure, others get lumpy and 'gum' up bearings, producing heat, friction, and ruined bearings.

"But the lubricant used for Ford Recorded Alemite Service is genuine Alemite—a pure solidified oil that stands up under 3000 pounds pressure, resists heat up to 200 degrees and lubricates properly at 30 degrees below zero."

Oil men point to this assertion and say that Alemite "solidified oil" must contain some solidifying agent which is soap.

THE fourth circular emphasizes the precision used in the manufacture of the Ford car, reference being made to the famous Johansson master gage blocks which measure to one-millionth of an inch.

"It stands to reason therefore," the circular continues, "that such a fine piece of machinery calls for new precision service and equipment."

The seven points of advantages of the F.R.A.S. are restated with the message of the saving in repair bills which is likely to follow regular, good lubrication.

These four pieces are now being sent new Ford owners but mailing pieces 5, 6, 7 and 8 are being held up for modification, the Ford company has announced. What the modification may be, has not yet been divulged.

Circular No. 6 as shown in the portfolio contains a drawing of a Ford chassis with its 39 bearing points that need lubrication.

Arguments used in circulars 7 and 8 are repetitions of those used in preceding circulars. In unmodified circular 8 the concluding argument is a warning against "greases offered as fitted to the Ford Alemite system" and a reiteration that cheap greases are filled with soap, etc.

The date of the original mailing is dependent on the date the dealer's order is received by the Alemite company. The second piece is mailed one week after the first and the third two weeks after the second. The remaining pieces go out at three-week intervals but the Ford company announced to dealers that some delay would be incurred on the last four pieces because of the modification.

The lubricating equipment is sold outright by the Alemite company to Ford dealers and that involves the purchase of 200 pounds of Alemite lubricant. After the first purchase of Alemite grease, the dealer may buy his lubricant wherever he desires but if he does not buy Alemite grease he

Under the hood of every car that enters your station is a small fill cap, half the size of the palm of your hand, that means thousands of dollars to you.

Nine times out of ten the customer drives in for gasoline. He may ask you to look at his oil. Chances are he won't. And it's dollars to doughnuts he intended to but didn't think.

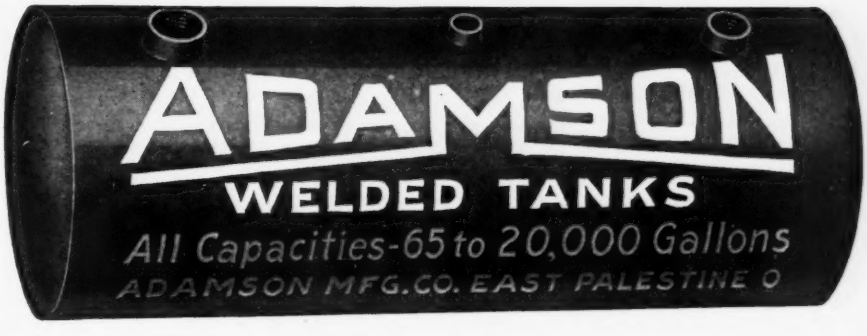
Right here is where Wizard Oil Units become the all important factor in the point of sales contact. They silently make their appeal, when properly displayed before the eyes of the motorist. Their graceful lines, their positive beauty of finish, their honest wholesomeness, suggests, demands that the motorist invite your attendant to look at his oil. At their best even attendants become order takers at times, not salesmen.

The Wizard Oil Unit, requiring no salary, no day off, with no bad habits and honest to a penny is truly your method for selling and dispensing oil—silently—efficiently—honestly.

THE NATIONAL STEEL BARREL CO.
3860 East 91st St. Cleveland, Ohio

FACTORIES
Cleveland New Orleans

Export Department, R. Meyer, 487 Broadway, New York, U. S. A.
Cables — Rymer — New York Codes — A-B-C- 5th Ed. Bentley's



1870 1929

"FIFTY NINE YEARS"

Manufacturing and Engineering Experience are Incorporated in To-day's Production of High Grade Lubricants Marketed Under the Well-Known Name of

The following brands have made a world-wide reputation:

FISKE'S Motor Oils
FISKE'S "B" Cylinder Oil
FISKE'S F. F. Engine Oil
FISKE'S Diesel Engine Oil
FISKE'S Air Compressor Oil
FISKE'S Magic Soluble Oil
FISKE'S Cup Grease
FISKE'S Pressure Lubricant
FISKE'S Gear Lubricant
FISKE'S Paste Cutting Compound

QUALITY — UNIFORMITY — SERVICE

FISKE BROTHERS REFINING CO.

24 State Street, New York, N. Y.

NEWARK, N. J. — *WORKS* — TOLEDO, OHIO

GRANBERG PETROLEUM METERS

Are Precision Instruments of Established Merit

They are extensively used on Tank Trucks, Truck Loading Racks and Tank Car Unloading Lines and are universally satisfactory wherever it is desirable to secure accurate measurements.

We have made a technical and practical study of the problem of accurately measuring petroleum oils and are prepared to give expert advice and assistance on the subject.

Engineers from our home office are permanently located in the Middle West and on the Atlantic Coast, for the purpose of helping our customers with their metering problems.

It will pay you to use our meters and profit by our knowledge and experience.

GRANBERG METER CORPORATION

"Precision Meters for Petroleum Oils"

79 New Montgomery St. San Francisco, Calif.

loses the merchandising service which is copyrighted, it was explained by the Ford company to NATIONAL PETROLEUM NEWS.

The tie-up of Ford and Alemite caused many protests from oil and grease companies and some of these companies wrote the Ford Motor Co. At lease one organization of marketers, the Pennsylvania Independent Oil Men's Association, through its secretary R. A. Overholser, wrote its views. Mr. Overholser's letter to Ford follows:

"Persistent reports have reached us that your good company has specifically recommended your dealers use Alemite grease in serving your equipment. Likewise that a special effort has been made to sell them this particular brand of grease.

"In the first place let us say that we have no quarrel with the Alemite company and that we consider Alemite grease to be a high grade product.

"ON THE other hand this organization is the representative of approximately eight hundred jobbers in Pennsylvania having within its membership a great many firms who sell grease equal to that of Alemite or any other grease on the market.

"In the name of the jobbing fraternity in Pennsylvania who sell in competition with Alemite we protest this ruling and request that immediate steps be taken to correct the injustice.

"We feel quite sure that you do not intend to arbitrarily rule those jobbers not marketing Alemite out of the picture and gratuitously give the Alemite company a virtual monopoly.

"We represent a tremendous background of friendly interest, good will and actual business to the Ford Motor Co. in Pennsylvania and we would appreciate very much a reassuring reply from you."

Mr. Overholser in a bulletin to his members wrote he had interviewed several Ford dealers who said efforts had been made to induce them to use nothing but Alemite and that the Ford company had tried to sell them Alemite.

The Ford company, however, explained it had recommended the service but did not insist that its dealers use only Alemite grease to the exclusion of greases of other manufacture.

In reiterating the statement that it was not recommending any particular grease, the Ford company takes its place alongside Dodge and several other automobile manufacturers which several years ago began to market their own motor oils but dropped the practice when the oil industry protested.

Pour Test Does Not Show How Oil Will Behave in Cold, Say Experimenters

FLYING makes more exacting demands upon motor oil than does automobile driving.

The rapid development of aviation is increasing the demand each year for higher grade lubricating oils.

A whole flock of problems confronts the technologists of our industry in manufacturing oils suitable for the purpose.

These points were made in a paper. "Fluidity and Other Properties of Aviation Engine Oils", prepared by E.R. Lederer, vice president and F.R. Staley, chief chemist of the Texas Pacific Coal & Oil Co. The paper was presented by Mr. Staley at the annual

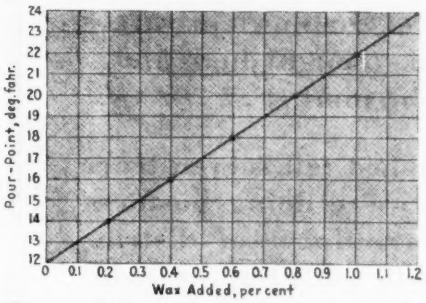


Fig. 1—Effect of added wax on the A.S.T.M. pourpoint

meeting of the Society of Automotive Engineers in Detroit last month.

The qualities specified by the speakers as necessary in the ideal oil for aircraft engines are also sought in oils for use in high speed automobiles which are habitually subjected to hard service. Speaking of the requirements of aircraft engines the authors said:

"Oil consumption and stability are important considerations because of the severe service which the oil must undergo. Furthermore, the long distances traversed and the great altitudes encountered within a comparatively short time often necessitate starting and operating under widely different temperature and pressure conditions.

"Selection of the proper crude is an important consideration in the manufacture of aviation engine oils. The three general classes of petroleum are known as asphalt base, paraffin base and mixed base crudes. The physical and chemical properties of the third class approach either those of the paraffin or of the asphalt base, depending upon the relative content of these two substances present in the crude petroleum.

"Scientific research and actual performance tests during the past two years have demonstrated the advantages of paraffin base oils over asphalt base oils for aviation engines and their superiority is now conceded by most authorities.

"Until recently the pour point of the average commercial paraffin base oil of suitable viscosity for aviation use was too high, because of the wax content, but during the last year much attention has been given to the dewaxing and the fractionating of lubricating oils by the refineries in this country and this has resulted in an improvement in their quality and in their unrestricted use as 'all-weather aero oils' ".

The paper quotes from an article by Wilkin, Oak and Barnard of the Standard Oil Co. of Indiana to the effect that their work shows, "definitely the necessity for both low temperature-coefficient of viscosity and low pour test in lubricants to be used at

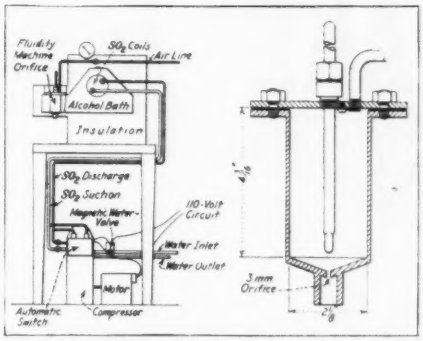


Fig. 3—Diagram of fluidity machine and enlarged cross-section of the orifice

low temperatures—an oil with both characteristics is the ideal for low temperature operation."

In order to make clear the terms used in the paper, Dr. Lederer and Mr. Staley give the A.S.T.M. definitions of oil characteristics as follows:

VISCOSITY of a liquid is the measure of its resistance to flow. It is measured in terms of a unit of force designated as "poise". The fundamental characteristic of a true viscous liquid is that its rate of flow through a capillary is directly proportional to the pressure applied.

Fluidity can be defined as the reciprocal of absolute viscosity in poises (Herschel)—or, in a broader sense, fluidity merely refers to the mobility of the oil in the engine without considering the force-flow ratio.

Consistency is that property of a material by which it resists permanent change of shape and is defined by the complete force-flow relation. In non-turbulent flow, if this relation is linear, the material is said to be fluid; otherwise, it is plastic.

Plasticity is that property of a material by which, as the shearing stress is lowered, it resists permanent change of shape relatively more than in the case of a fluid; hence, for a plastic material, the ratio of flow to force is not constant.

Lederer and Staley go on to say:

"THE fluidity or consistency of aviation-engine oils below their A.S.T.M. pour points and the significance of dewaxing paraffin-bearing oils are the main subjects of this paper. In the case of wax-bearing lubricating oils we have to deal with a two-phase system below the cloud-point, since, at this temperature, the wax begins to precipitate from the liquid. The quantity of wax present in a given oil, as well as the nature of the wax, whether crystalline or amorphous, determines the cloud-point and the pour-point.

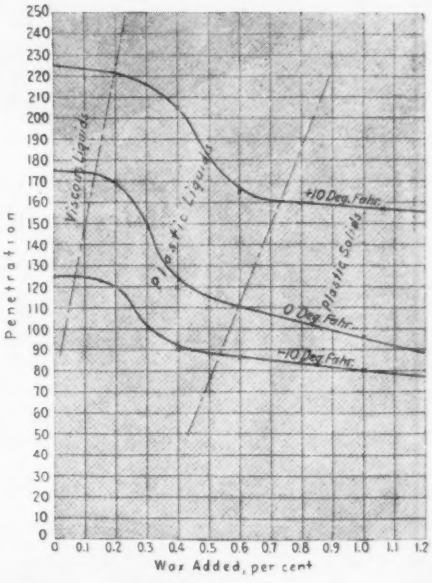


Fig. 2—Effect of added wax on the A.S.T.M. penetration

Analyses of Test Data

"Fig. 1 shows the effect on the A.S.T.M. pour-point of the addition of wax to a partly dewaxed paraffin-base oil. This is a straight-line relation. The wax added was some of the same that was taken out in the dewaxing process. It should be noted that a small addition of wax makes a marked change in the pour-test of the oil so that, in dewaxing to obtain a zero-pour-point oil, the refiner is deal-

Last Fall We Said:

PENN-DRAKE

OILS

"Good for 1000 Miles or More"

"There's a real opportunity waiting for the live aggressive firms or individuals who have the good business judgment to see that the distributorship for

PENN-DRAKE MOTOR OILS

in a given territory offers more potentials for profits than the marketing of their own private brand stocks bought here and there 'on the market'."

What we said last fall is even truer today — and we're doing business today with a number of distributors who believed what we said.

How about you?

The American Oil Works Co.

Titusville, Penn.

HE FOUND IT FIRST -
WE MADE IT BEST -
IN TITUSVILLE

Guaranteed 100% PURE PENNSYLVANIA OIL PERMIT NO. 16

Col. Drake drilled the first oil well in this country at Titusville, Pennsylvania in 1859. And the high quality of PENN-DRAKE 100% Pure Pennsylvania Petroleum products can be traced thru all these years of oil refining experience at the birthplace of the petroleum industry.

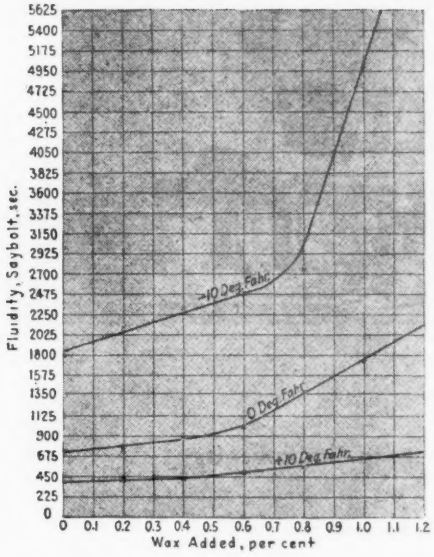


Fig. 4—Effect of added wax on the fluidity

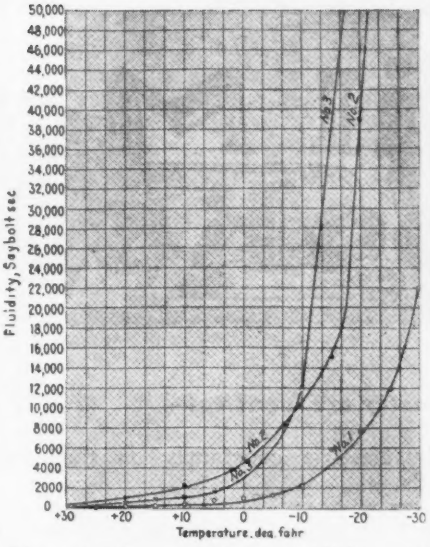


Fig. 5—Comparative fluidities of three kinds of Grade 1 Aero oil and a California oil

ing with small quantities of wax at temperatures below 15 degrees F.

"The three curves in Fig. 2 represent the behavior of an oil at three different temperatures: plus 10, zero, and minus 10 degrees F. The tests were made with an A.S.T.M. grease penetrometer. The effect of the wax becomes more pronounced at lower temperatures. As the temperature of a wax-bearing oil is reduced, the consistency changes from that of a viscous to that of a plastic liquid and, finally, to a plastic solid. Fig. 2 can be divided into three zones which show the three states of the oil. It should be noted that, by reduction of the wax content from 0.73 to 0.53 per cent, or 0.20 per cent, the temperature at which the oil changes from a plastic liquid to a plastic solid is reduced from plus 10 to minus 10 degrees F., a difference of 20 degrees and that, as shown in Fig. 1, the difference in pour points is only 2 degrees F. This illustrates the importance of wax removal for low-temperature operation.

"The great reduction in the temperature at which the oil changes to a plastic solid by a relatively small reduction in the wax content helps to explain why the break-away torque in cranking is as much as 50 per cent greater for a partly dewaxed oil than for a similar oil of lower pour point, even though the effort required to continue the piston motion is the same for the two paraffin oils. The oil is a plastic solid as the piston breaks away, becomes a plastic liquid as the motion continues and finally becomes a viscous liquid.

Fluidity Machine and Test Results

The apparatus used in this work is shown in diagrammatic form in Fig. 3. It consists of a modified viscosimeter immersed in a bath capable of reducing the temperature of the oil to minus 30 degrees F. The oil tube was made pressure tight so that air pressure could be applied. The temperature was taken by a low-temperature A.S.T.M. cold test thermometer, the bulb of which was immersed near the orifice. All determinations in this machine were made under a pressure of 7 pounds per square inch.

"The temperature was slowly reduced and the time in seconds, as measured by a stop-watch, required to deliver 60 cubic centimeters of the oil, corrected to a temperature of 60 degrees F., was determined at the various temperatures. The quantity of oil delivered was weighed and its volume calculated from its specific gravity.

"In Fig. 4, the effect of adding wax to a partly dewaxed oil is shown by running the samples at three different temperatures in the fluidity

This tabulation shows the viscosity, the A.S.T.M. pour points and the temperatures at which the oils shown in Fig. 5 cease to flow under pressure of 7 pounds per square inch.

No.	Type	Saybolt sec. at 210 degrees F.	A.S.T.M. Pour Point	Solid pour test at 7 lbs. per sq. in.
1	Ranger	93	10	Below minus 30 F.
2	Coastal	93	10	minus 25 F.
3	Pennsylvania	90	40	minus 25 F.

Original
"GREASE-PAK"
TRADE MARK REG. U.S. PAT. OFFICE

Model 25, the most convenient truly portable 25 lb. capacity greasing outfit obtainable. Pumps ½ lb. grease per stroke. Has durable heavy malleable cast base, strong steel shell 16-gauge top—all seams flanged upward for waterproofness. Metal sleeves protect hose connections against breakage—hose 4½' of ¼" flexible metal with cast nozzle.

Write for
"GREASE-PAK" *Bulletins*
To Muskegon.

Bennett Export Corporation,
32 Broadway, New York City

~Symbol of Quality~

Bennett Pumps Corporation
QUALITY BUILT
Bennett
Dispensing Equipment
FOR OIL MARKETERS
Muskegon, Michigan.

Where you and industry are identical—

Every successful business is constantly on the lookout to improve its machinery and methods.

You, as an individual, in order to progress must devote a reasonable part of your time to ***improving your mind.***

Good books on various phases of the oil industry will improve your mind, and pay you big dividends.

HOUSE HEATING WITH OIL FUEL

by

P. E. Fansler, E. E.

One of the most valuable contributions to the oil industry in this third and greatly-enlarged edition of "House Heating with Oil Fuel" is the Iso-Oil-Consumption chart. By means of this chart, it is possible to estimate closely the volume of oil fuel required in any home or building in the United States.

This book of 354 pages, profusely illustrated, meets the present widespread demand for information on the use of oil fuel for domestic heating, and covers the subject in all phases.

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by

E. N. Klemgard, B. Sc.

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This book is particularly valuable because so very few books have been written dealing with "Lubricating Greases" in an up-to-date way. Information as to grease making processes is usually hard to obtain, as such information is generally closely guarded as trade secrets. This work is the result of many years of research with the largest manufacturers of lubricants in the country.

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The tabulation shows the viscosity, the A.S.T.M. pour point and the temperatures at which the oils shown in Fig. 6 cease to flow under a pressure of 7 pounds per square inch.

No.	Type	Saybolt sec. at 210 degrees F.	A.S.T.M. Pour Point	Solid pour test at 7 lbs. per sq. in.
1	Ranger	78	0	Below minus 30 F.
2	Coastal	78	5	minus 25 F.
3	Pennsylvania	80	20	minus 30 F.
4	California	60	0	Below minus 30 F.

machine. The oil used was made from paraffin base Ranger crude, the wax added being some of that taken out in the Sharples dewaxing process. From the shapes of the curves it will be noted that the wax content of the oil becomes more apparent at low temperatures.

"Fig. 5 shows the comparative fluidities of three kinds of Grade 1 Aero oils and an oil produced from a California crude. Curve No. 4 shows the fluidity of a California naphthene base crude of 60-Saybolt-seconds viscosity at 210 degrees F. It is shown merely as a representative oil from this type of crude and is below the viscosity range of the three other oils shown. The Pennsylvania oil No. 3 having a pour point of 20 degrees F., shows a better fluidity than the asphalt base oil No. 2, having a 5 pour point while the paraffin base Ranger crude No. 1, having a zero pour point, shows the best fluidity curve. The A.S.T.M. pour points of these oils are shown at the right of Fig. 5, as are also the temperatures at which the oil ceases to flow under a pressure of 7 pounds per square inch.

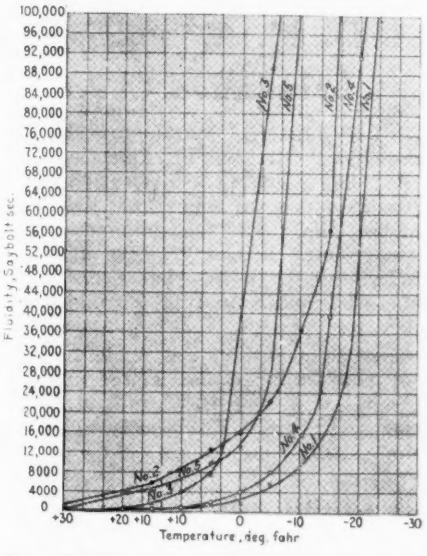


Fig. 7—Fluidity curves for oils corresponding to Grade 4 Aero oils

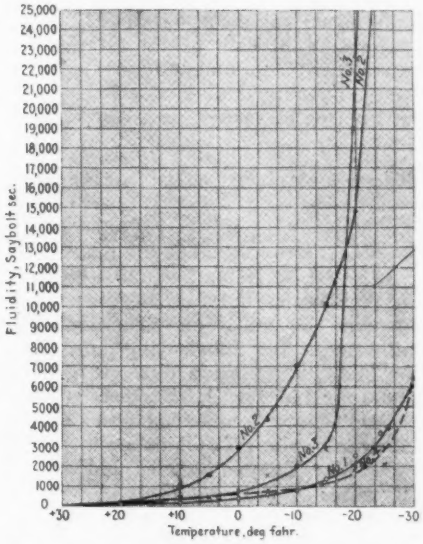


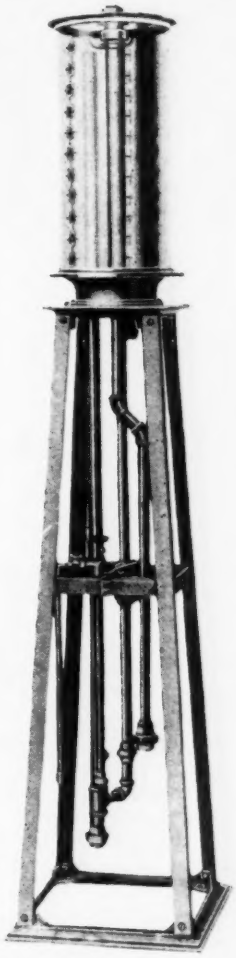
Fig. 6—Curves showing comparative fluidities of Grades 2 and 3 Aero oils made from asphalt base and paraffin base crudes

"Fig. 6 shows a similar series of curves for Pennsylvania and Ranger paraffin base and for coastal oils having viscosities corresponding to Grades 2 and 3 Aero oil. The pour point of the Pennsylvania oil No. 3

The tabulation shows the viscosity, the A.S.T.M. pour point and the temperature at which the oils shown in Fig. 7 cease to flow under a pressure of 7 pounds per square inch.

No.	Type	Saybolt sec. at 210 degrees F.	A.S.T.M. Pour Point	Solid pour test at 7 lbs. per sq. in.
1	Ranger	121	5	Below minus 25 F.
2				
3	Pennsylvania	120	20	minus 10 F.
4	Pennsylvania	120	15	minus 25 F.
5	Pennsylvania	117	35	minus 10 F.

HAYES



Built Like an Oil Derrick

In one important respect Hayes Pumps are radically different from other Service Station pumps.

The glass cylinder is supported by an angle iron frame rigidly bolted to a cast iron base.

The entire weight of the cylinder and its contents, pipe assembly and pumping unit is carried on this oil derrick type frame, removing all weight, strain and vibration from the pipe joints.

THE HAYES EQUIPMENT MANUFACTURING CO.
Wichita, Kansas

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is high, being 40 degrees F. and is therefore incompletely dewaxed. The pour point on the Ranger and coastal oils, Nos. 1 and 2, is plus 10 degrees F. The curves show that the fluidity of the Pennsylvania oil is better than that of the coastal oil to minus 9 degrees F., at which point the curves cross. This is due to the wax content. The Ranger oil having a pour point of 10 shows a better fluidity than either of the other two oils.

"Fig. 7 shows a series of fluidity curves for oils from various crudes corresponding to Grade 4 Liberty Aero oil. For this work three different oils from Pennsylvania crude are shown. The pour points are plus 20, plus 15 and plus 35 degrees F. The Ranger oil having a 5 pour point shows the best fluidity curve; Pennsylvania No. 4 with a pour point of 15, follows closely. Curves Nos. 3 and 5 represent partly dewaxed oils and show better fluidity than the asphalt base oil to about plus 3 in one case and minus 3 degrees F. in the second case. Curve No. 3 crosses Curve No. 5 at 4 degrees F. above zero, although the pour point of No. 3 sample is at 20 degrees F. and that of No. 5 is 35 degrees F. This can be explained by the nature of the wax; a crystalline wax will show a different behavior at low temperatures than does an amorphous wax.

"The behavior of oils at temperatures below their pour point is very complicated and although there are many types of instrument for studying their behavior no method has as yet been standardized. The present A.S.T.M. pour test is no indication of the behavior of oil at low temperature.

"Check tests on the same oil by the same observer or by different testers using the same method show large discrepancies, proving that results are influenced by the individual skill of the tester and the manner and the speed of cooling the oil. Complications arise in the case of paraffin-base oils because of the wax structure and the wax content of the oils. The process of determining the pour-point of an oil by cooling is subject to criticism, especially in the case of oils containing crystalline wax. This is because the oil may be under-cooled or shock-chilled, which does not allow sufficient time for the formation of crystalline wax.

"The oil also contains amorphous wax; so it is possible to obtain a pour-point lower than the actual solidification-point of the oil. This difference is due to variation in operation.

"Dr. H. Vogel, of Hamburg, Germany, has developed an apparatus and a method for determining the true temperature at which an oil begins to flow after it has been solidified.* Dr. Vogel's theory is that the temperature at which a paraffin lubricant passes from the solid into the liquid state can be determined *accurately*.

"His procedure is virtually a reversal of our pour point determination. He preheats the oil to 50 degrees C. (122 degrees F.), cools it first to room temperature and then, in an alcohol bath to which he adds solid carbonic acid, further to minus 30 degrees C. (minus 22 degrees F.). By applying the pressure of a 60-cm. column of water, he observes the temperature at which the oil surface in the U-tube rises. The mean temperature of the oil and of the alcohol bath, at this point, is the true flow-point of the oil. With the aid of this apparatus it is also possible to observe the actual fluidity of an oil near its true flow-point and at low temperatures, by determining the viscosity in centipoises at such temperatures. * * *"

*See Erdoel und Teer, vol. 3, No. 33.

Many Bidders for Nebraska State Oil Business

LINCOLN, Neb., Feb. 28.—Twenty-one companies bid for the contract to furnish the state of Nebraska's requirements for lubricating oils, tractor oils, transmission oils and greases and four bid for the business of supplying gear compound and chassis lubricant only. The bids were opened Feb. 18. The companies bidding on oil were:

City Fuel Co., Lincoln; Mona Motor Oil Co., Council Bluffs, Ia.; U. S. Oil Works, Omaha; National Refining Co., Cleveland; Commerce Oil Co., Council Bluffs; Lute Morse, Lincoln; The Texas Co., Denver; Lincoln Oil Co., Lincoln; Independent Oil & Gas Co., Omaha; Nebraska Buidk Co., Lincoln; Brainard Oil Co., Brainard; Henkle & Joyce Co., Lincoln; Nourse Oil Co., Kansas City; Shaffer Oil & Refining Co., Omaha; Sinclair Refining Co., Omaha; Continental Oil Co., Lincoln; Nicholas Oil Corp., Omaha; Transcontinental Oil Co., Sioux City, Ia.; White Eagle Oil & Refining Co., Kansas City; Standard Oil Co. of Nebraska, Omaha; State Oil Co., Lincoln.

Gear compound and chassis grease bidders were: D. A. Lubricating Co., Indianapolis; Nebraska Culvert Co., Wahoo, Neb.; Interstate Machinery Co., Omaha and Alemite Lubricating Co., Omaha.

New York Tank Hearing Due This Month

CLEVELAND, March 2.—Hearing will be held some time this month on the mandamus action brought last November by the Smith-Hamburg-Scott Welding Co., Long Island City, N. Y., to compel the fire commissioner of New York to approve the gasoline truck tanks made by that company for use in New York City.

A temporary injunction forbidding the commissioner from approving for sale any of the tanks sold in New York by the Tank & Accessories Corp., a William F. Kenny enterprise, is still in force.

C. H. Scott, president of the Smith-Hamburg-Scott company, reiterated this week that his company was seeking only to throw open the New York gasoline truck tank business to all manufacturers of tanks that meet reasonable safety needs, and that it was not fighting any particular manufacturer who either was doing business in New York or hoped to do business there.

The attack was made on the tank sold by the Kenny company on the grounds that the New York tank specifications were drawn about patented features of the Kenny tank.

The Davis Welding & Mfg. Co. of Cincinnati has become a party in the suit. The Davis company has filed an affidavit in New York, alleging that it has designed a tank that fully meets the New York specifications without trespassing on the patents under which the Kenny tank is made.

The chief point of contention is the bulkhead which must protrude beyond the shell of the tank, a feature of the Kenny tank. The Smith-Hamburg-Scott tank has bulkheads welded within the tank. The new Davis tank has protruding bulkheads.

I. O. M. A. Publishes Lubrication Chart

CLEVELAND, March 2.—The Independent Oil Men of America, Chicago, has prepared a lubrication chart for guidance of sellers of Red Hat motor oils. The chart covers passenger cars, trucks, tractors and motorcycles over a five-year period, and also the predominating airplane motors.

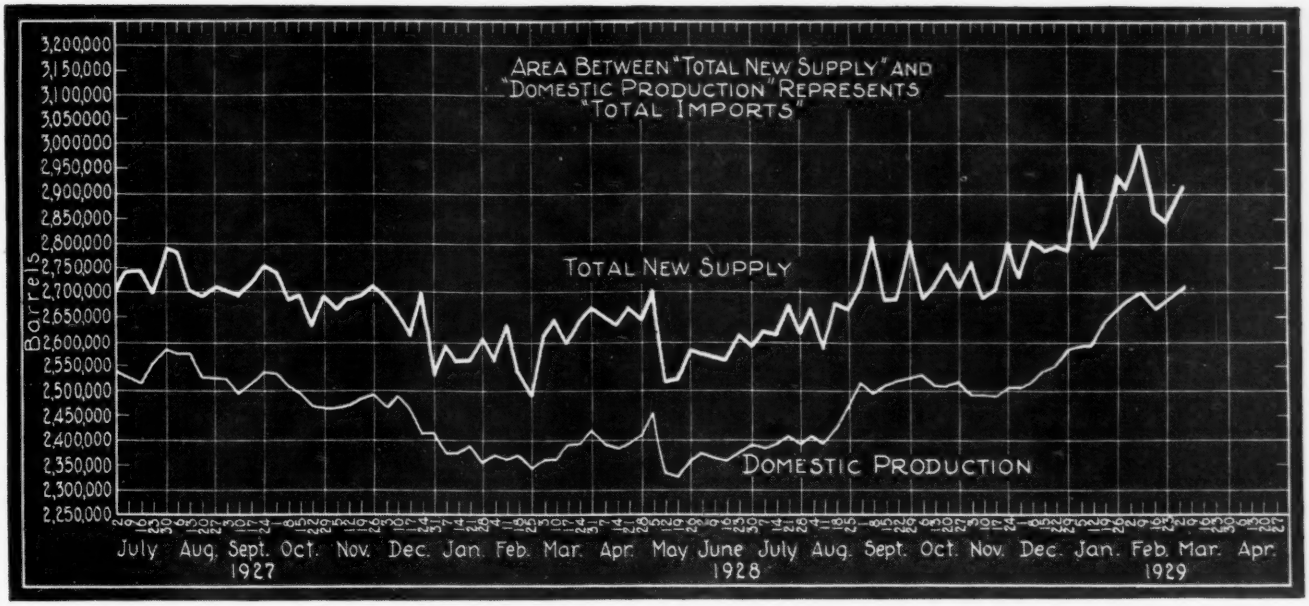
Recommendations are made for oils for both summer and winter use and in both the Red Hat grade designation and the S.A.E. viscosity numbers.

The chart was prepared under the direction of Jay Trexler, director of the Red Hat division of the I.O.M.A., who says it lists oil requirements for more motor vehicles than any other chart he has seen. Discontinued as well as current makes are listed.

Mr. Trexler said sales of Red Hat motor oils in 1928 were almost three times the volume of sales in 1927.

LOS ANGELES, March 1.—The Southern Pacific Railroad has set aside free automobile parking areas adjacent to 44 passenger stations in California. The spaces will be reserved for the company's patrons using the trains. It will enable the traveler to drive to the station in his own machine, make his railroad trip, and, on his return, find his automobile waiting to carry him home.

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	Mar. 2	Feb. 23
Production east of Rockies	**1,901,100**	**1,885,950**
Increase		**15,150**
Total production in U. S.	**2,702,900**	**2,694,150**
Increase		**8,750**
Crude oil imports	**217,000**	**171,571**
Increase		**45,429**
Total crude supply	**2,919,900**	**2,865,721**
Increase		**54,179**

OKLAHOMA	Mar. 2	Feb. 23
Allen Dome	25,900	27,500
Blackwell	4,050	4,100
Bowlegs	36,100	33,800
Braman	3,350	3,450
Bristow-Slick	18,950	18,950
Burbank	22,350	22,200
Cromwell	7,850	7,850
Cushing	20,500	20,500
Davenport	1,650	1,650
Duncan District	6,950	7,050
Earlsboro	58,750	59,450
Fox	1,500	1,500
Garber	5,700	6,000
Braham	4,400	4,450
Healdton	12,950	13,000
Hewitt	8,500	8,550
Hubbard	950	1,950
Little River	83,800	84,650
Logan County	11,650	13,200
Maud	37,150	41,900
Mission	47,000	35,150
North Okmulgee	14,650	14,600
Oklahoma City	5,150	5,450
Osage (outside Burbank)	25,850	25,800
Papoose	3,400	3,400
Pearson	1,650	1,700
St. Louis	111,950	106,750
Scholem-Alechem	13,100	13,200
Searight	9,850	9,600
Seminole	33,800	33,650
South Okmulgee	8,450	8,450
Thomas	850	850
Tonkawa	10,500	10,500
Wewoka	6,000	5,100
Yale-Jennings	7,600	7,650
Others	40,200	39,850
Total, Oklahoma	713,000	703,400
Increase		9,600

KANSAS		
Augusta-Fox Bush.	2,900	2,900
Churchill	7,050	7,200
Eldorado-Towanda	12,050	12,050
Florence-Covert	1,000	1,000
Greenwood County	21,900	22,000
Oxford	5,750	5,800
Peabody-Elbing	3,000	3,050
Rainbow Bend	1,000	1,000
Russell	3,400	3,400
Sedgwick County	8,650	7,600
Others	29,000	29,500
Total, Kansas	95,700	95,500
Increase		200

NORTH LOUISIANA		
Bellevue	700	750
Caddo, light	9,000	8,750
Caddo, heavy	2,450	2,800
Cotton Valley	2,850	2,900
De Soto and Red River	4,000	3,950
Elm Grove	600	600
Haynesville	5,500	5,500
Homer	3,950	4,000
Pleasant Hill	450	450
Urania	5,750	5,800
Others	250	200
Total, North Louisiana	35,700	35,700

ARKANSAS		
Champagnolle	8,700	10,150
El Dorado	4,600	4,600
Lisbon	1,450	1,500
Nevada	1,400	1,450
Smackover, light	6,250	6,250
Smackover, heavy	50,900	51,050
Stephens	1,000	1,000
Others	100	100
Total, Arkansas	74,400	76,100
Decrease		1,700

TEXAS (Outside Gulf Coast)		
Panhandle District		
Carson County	5,200	5,700
Gray County	20,800	22,000
Hutchinson County	27,050	25,250
Wheeler County	750	600
Others	1,700	1,700
Total, Panhandle Texas	56,100	55,250
Increase		850
North Texas		
Archer County	17,300	17,500
Burkburnett	9,000	9,100
Electra	12,850	13,000
Iowa Park and K. M. A.	6,100	6,300
Montague-Cooke	9,600	9,700
Wilbarger	26,700	26,900
Others	500	500
Total, North Texas	82,050	83,000
Decrease		950
West Central Texas		
Brown County	9,000	8,900
Callahan County	3,700	3,700
Coleman County	3,700	3,700
Eastland-Desdemona	6,750	6,800
Jack County	1,700	1,700
Palo Pinto County	400	400
Shackleford County	13,000	13,100
Stephens County	6,550	6,400
Throckmorton County	700	700
Young County	7,300	7,400
Others	650	700
Total, West Central Texas	53,450	53,500
Decrease		50

West Texas		
Crane and Upton Counties	49,900	50,600
Crockett County	2,200	2,250
Howard County	45,500	47,800
Jones County	6,200	6,500
Mitchell and Scurry Counties	2,700	2,700
Pecos County	85,800	83,750
Reagan County	18,500	18,800
Winkler County	173,800	170,400
Others	1,650	1,700
Total, West Texas	386,250	384,500
Increase		1,750

East Central Texas		
Boggy Creek	3,600	3,700
Corsicana-Powell	8,700	8,950
Currie	450	500
Mexia	5,700	5,800
Nigger Creek	600	600
Richland	400	500
Wortham	1,200	1,350
Total, East Central Texas	20,650	21,400
Decrease		750

Southwest Texas		
Dale	700	700
Laredo District	12,400	12,500
Luling	12,650	12,800
Lytton Springs	1,000	1,000
Salt Flat	28,650	26,000
Somerset	600	600
Others	5,250	5,000
Total, Southwest Texas	61,250	58,600
Increase		2,650
Total, Texas (Outside Gulf Coast)	659,750	656,250
Increase		3,500

GULF COAST Coastal Texas		
Barbers Hill	5,650	5,900
Batson	1,400	1,250
Big Creek	4,500	4,850
Blue Ridge	4,350	4,000
Boling	1,800	2,000
Damon Mound	800	950
Goose Creek	6,900	6,500
Hull	10,300	9,900
Humble	5,250	4,600
Orange County	2,800	2,850
Pierce Junction	11,950	12,400
Raccoon Bend	2,600	2,250
Saratoga	900	900
Sour Lake	2,950	2,900
South Liberty	5,850	6,200
Spindletop	32,900	33,550
Sugarland	7,950	7,600
West Columbia	7,000	7,000
Others	7,000	5,900
Total, Coastal Texas	122,850	121,500
Increase		1,350

Coastal Louisiana		
East Hackberry	5,750	6,150
Edgerly	850	850
Evangeline	800	800
Lockport	4,800	5,000
Sorrento Dome	550	550
Sulphur Dome	2,000	2,000
Sweet Lake	500	550
Vinton	4,350	4,100
Others	1,050	900
Total, Coastal Louisiana	20,650	20,900
Decrease		250
Total Gulf Coast	143,500	142,400
Increase		1,100

ROCKY MOUNTAIN Wyoming		
Big Muddy	2,250	2,250
Elk Basin	700	750
Grass Creek	2,250	2,200
Labarge	2,050	2,050
Lance Creek	300	300
Lost Soldier	3,400	3,400
Oregon Basin	3,000	3,350
Rock Creek	2,150	2,400
Salt Creek	33,600	32,000
Others	2,550	2,600
Total, Wyoming	52,250	51,300
Increase		950

Montana		
Cat Creek	1,300	1,250
Pondera	2,700	1,800
Sunburst	5,400	5,450
Total, Montana	9,400	8,500
Increase		900

Colorado		
Florence	1,400	1,150
Fort Collins	2,650	2,700
Moffat (Craig)	1,450	850
Others	1,950	1,600
Total, Colorado	7,450	6,300
Increase		1,150

New Mexico		
Artesia	950	950
Hogback	400	200
Rattlesnake	1,350	1,250
Table Mesa		100
Others	150	150
Total, New Mexico	2,850	2,650
Increase		200
Total, Rocky Mountain	71,950	68,750
Increase		3,200

CALIFORNIA		
Dominguez	10,000	10,000
Elwood-Goleta	22,500	23,000
Huntington Beach	47,000	47,000
Inglewood	26,500	26,500
Kettleman Hills	3,500	3,400
Long Beach	180,000	181,500
Midway-Sunset	73,000	73,000
Rosecrans	6,500	6,500
Santa Fe Springs	197,000	202,000
Seal Beach	33,000	32,500
Torrance	15,000	15,000
Ventura Avenue	55,500	55,500
Others	132,300	132,300
Total, California	801,800	808,200
Decrease		6,400

EASTERN		
(Including Ill., Ind., Ky., O., W. Va., Pa., and N. Y.)	107,100	107,850
Decrease		750

Compilation Of Mid-Continent Refinery Operations

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Mid-Continent Refinery Operations Week Ended March 1 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended Mar. 1
Plants Reporting.....	12	29	24	13	12	90
Da. Av. Cap. (bbls.)..	92,000	160,200	85,100	76,500	54,900	468,700
Da. Cracking Capacity	30,700	52,600	17,200	.....	22,700	123,200
Da. Av. Crude Runs..	56,056 — 2.6	95,076 — 6.8	58,950 + 0.1	54,711 + 17.2	60,393 + 1.9	325,186 + 0.3
Da. Av. Other Oils...	7,773 — 4.5	8,276 — 2.8	3,846 — 10.9	1,247 + 7.5	2,604 — 19.8	23,746 — 6.4
GASOLINE—Gallons						
Stocks, Feb. 22.....	28,308,000	68,039,000	22,899,000	5,810,000	9,411,000	134,467,000
Prod. 2-22 to 3-1.....	8,879,000 — 0.6	15,434,000 — 7.2	7,228,000 — 6.3	4,072,000 + 21.3	5,987,000 + 7.4	41,600,000 — 1.4
Ship. 2-22 to 3-1.....	6,997,000 + 4.9	13,324,000 + 8.1	6,780,000 + 5.4	3,603,000 — 1.1	5,361,000 — 15.6	36,065,000 + 1.8
Stocks, Mar. 1.....	30,190,000 + 6.6	70,149,000 + 3.1	23,347,000 + 2.0	6,279,000 + 8.1	10,037,000 + 6.7	140,002,000 + 4.1
Ratio Sales to Prod...	78.8%	86.3%	93.8%	88.5%	98.5%	86.7%
KEROSENE—Gallons						
Stocks, Feb. 22.....	3,915,0000	7,457,000	1,611,000	58,000	636,000	13,677,000
Prod. 2-22 to 3-1.....	1,906,000 — 1.1	1,828,000 — 28.4	1,634,000 + 18.7	29,000 +107.1	741,000 + 33.5	6,138,000 — 4.5
Ship. 2-22 to 3-1.....	1,641,000 — 11.7	3,202,000 + 27.6	1,525,000 + 1.7	8,000 + 14.3	403,000 — 36.7	6,779,000 + 4.1
Stocks, Mar. 1.....	4,180,000 — 6.8	6,083,000 — 18.4	1,720,000 + 6.8	79,000 + 36.2	974,000 + 53.1	13,036,000 — 4.7
Ratio Sales to Prod...	86.1%	175.2%	93.3%	27.6%	54.4%	110.4%
STOVE DISTILLATE—Gallons						
Stocks, Feb. 22.....	433,000	1,567,000	298,000	106,000	30,000	2,434,000
Prod. 2-22 to 3-1.....	299,000 +264.6	932,000 — 9.5	202,000 + 8.6	125,000 + 37.4	87,000 — 23.7	1,645,000 + 9.4
Ship. 2-22 to 3-1.....	173,000 — 52.7	1,090,000 — 5.2	200,000 + 14.3	108,000 — 10.8	80,000 — 28.6	1,651,000 — 13.7
Stocks, Mar. 1.....	559,000 + 29.1	1,409,000 — 10.1	300,000 + 0.7	123,000 + 16.0	37,000 + 23.3	2,428,000 — 0.2
Ratio Sales to Prod...	57.9%	117.0%	99.0%	86.4%	92.0%	100.4%
GAS OIL—Gallons						
Stocks, Feb. 22.....	4,282,000	16,288,000	4,283,000	12,534,000	3,856,000	41,243,000
Prod. 2-22 to 3-1.....	1,383,000 — 3.8	2,113,000 + 67.8	1,508,000 + 64.3	1,186,000 + 51.1	1,807,000 + 0.4	7,997,000 + 29.0
Ship. 2-22 to 3-1.....	889,000 — 48.1	3,961,000 +103.7	1,231,000 +140.0	1,100,000 + 24.4	1,877,000 — 16.2	9,058,000 + 24.2
Stocks, Mar. 1.....	4,776,000 + 11.5	14,440,000 — 11.3	4,560,000 + 6.5	12,620,000 + 0.7	3,786,000 — 1.8	40,182,000 — 2.6
Ratio Sales to Prod...	64.3%	187.5%	81.6%	92.7%	103.9%	113.3%
FUEL OIL—Gallons						
Stocks, Feb. 22.....	12,335,000	34,528,000	37,659,000	39,772,000	21,649,000	145,943,000
Prod. 2-22 to 3-1.....	5,664,000 — 3.9	5,964,000 — 11.7	6,608,000 — 3.1	10,825,000 + 17.0	7,456,000 — 8.7	36,517,000 — 1.0
Ship. 2-22 to 3-1.....	6,579,000 + 4.9	8,171,000 — 6.1	7,286,000 + 12.1	9,854,000 + 11.8	7,074,000 — 10.7	38,964,000 + 2.0
Stocks, Mar. 1.....	11,420,000 — 7.4	32,321,000 — 6.4	36,981,000 — 1.8	40,743,000 + 2.4	22,031,000 + 1.8	143,496,000 — 1.7
Ratio Sales to Prod...	116.2%	137.0%	110.3%	91.0%	94.9%	106.7%

Gasoline Produced by Various Methods, Week Ended March 1

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run.....	5,839,000	65.8	10,020,000	64.9	5,291,000	73.2	3,944,000	96.9	2,395,000	40.0	27,489,000	66.1
Cracked.....	2,633,000	29.6	4,704,000	30.5	1,570,000	21.7	.....	.....	3,129,000	52.3	12,036,000	28.9
Natural.....	407,000	4.6	710,000	4.6	367,000	5.1	128,000	3.1	463,000	7.7	2,075,000	5.0
Total.....	8,879,000		15,434,000		7,228,000		4,072,000		5,987,000		41,600,000	

+or — columns are % change over previous week.

Mid-Continent Gasoline Shipments Increase

Staff Special—By Telegraph

TULSA, March 3

MILDER weather in some parts of Middle West last week of February was reflected to some extent in gasoline shipments from 90 Mid-Continent refiners reporting weekly operations to this publication.

Gasoline shipments from Kansas plants for the week ended March 1 increased 300,000 gallons while those from Oklahoma plants reporting increased 1,000,000 gallons. North Texas refiners increased shipments 300,000 gallons while west Texas refiners' shipments were steady. The Louisiana-Arkansas group failed by 1,000,000 gallons to ship as much as they did the previous week. The increase for the entire field was 600,000 gallons.

Gasoline production was reduced ap-

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended March 1. Change in stocks figured from Feb. 1.

GASOLINE

	Gallons
Production	165,937,000
Shipments	139,200,000
Net change in stocks	+26,737,000
Ratio sales to production	83.9%

KEROSENE

Production	24,371,000
Shipments	25,356,000
Net change in stocks	—985,000
Ratio sales to production	104.0%

STOVE DISTILLATE

Production	6,479,000
Shipments	7,522,000
Net change in stocks	—1,043,000
Ratio sales to production	116.1%

GAS OIL

Production	26,262,000
Shipments	30,432,000
Net change in stocks	—4,170,000
Ratio sales to production	115.9%

FUEL OIL

Production	145,519,000
Shipments	155,543,000
Net change in stocks	—10,024,000
Ratio sales to production	106.7%

proximately 600,000 gallons for the field as a whole, reductions being registered in Kansas, Oklahoma and North Texas, and increases in west Texas and Louisiana-Arkansas. Gasoline stocks March 1 at reporting refineries totaled 140,002,000 gallons which at the current rate of shipments represents 27.2 days' supply.

For the four weeks of February reporting refiners manufactured 165,907,000 gallons of gasoline while they shipped only 139,200,000 gallons. They accordingly increased stocks during the month by 26,737,000 gallons or slightly less than a million gallons a day.

Oklahoma refiners began to feel the spring demand for kerosenes during the last week of February. Shipments from Oklahoma plants increased approximately 700,000 gallons. Shipments for the field as whole increased 200,000 gallons. Production was reduced almost 300,000 gallons, Kansas showing a reduction of 1.1 per cent and Oklahoma 28.4 per cent while north Texas increased production 18.7 per cent, west Texas 107.1 per cent and Louisiana-Arkansas 33.5 per cent. Stocks at the close of the week totaled 13,036,000 gallons as compared with 11,671,000 gallons at the corresponding period last year at which time very few of the west Texas plants were included in the report.

Milder weather which aided gasolines curtailed stove distillate shipments somewhat. Shipments for the week were off 500,000 gallons or 13 per cent while production was increased 9.4 per cent. Stocks were reduced only 6,000 gallons. Unless refiners continue to produce distillates at present levels for some time after demand has dropped entirely stocks at end of the season this year will be considerably under those for last year. At the present time Kansas refiners have slightly more than half as much as the corresponding time a year ago while Oklahoma refiners have a little more than a third as much.

Oklahoma and the Louisiana-Arkansas refiners were the only ones to draw on gas oil stocks. Production for the field was up 1,700,000 gallons while shipments were up approximately the same amount. Stocks were reduced 1,100,000 gallons.

Fuel oil production was only slightly lower while shipments were up only 700,000 gallons. Stocks were reduced 2,500,000 gallons. Crude runs for the field were increased 800 barrels daily average with Oklahoma & Kansas the only ones showing reductions.

TULSA, March 2.—The refinery of the former Inter-Ocean Refining Co. at Bristow, which was bought several months ago by the Producers Oil Co. is being remodeled and some modern equipment installed, and probably will be placed in operation within the next 30 to 60 days.

Transcontinental Buys Gulf Plant Site

HOUSTON, March 1.—Transcontinental Oil Co.'s plans for eventual construction of a refinery on the Gulf Coast were carried one step further when it was announced the company had acquired a 400 acre plant site on the Houston ship channel at Texas City. No date has been set for construction, according to H. D. McCracken, vice president at Fort Worth, who is authority for the further statement that work will start simultaneously on the refinery and a pipeline from west Texas.

Work of surveying for the pipeline has been in a preliminary stage for a year, resulting in frequent rumors of construction plans over a long period. It is now said work of obtaining right-of-way for the system has been about completed.

Transcontinental now has an appeal suit pending before the Supreme Court of the United States seeking to segregate its share of the Yates field, Pecos county, oil produced under joint operations with the Mid-Kansas Oil & Gas Co., subsidiary of the Ohio Oil Co. Transcontinental lost its suit in federal district court at Fort Worth and again after taking it to the circuit court of appeals at New Orleans.

Broker Denies Ethyl Name Infringed

CLEVELAND, March 4.—R. Prescott Beardslee, Cleveland oil broker who was sued by the Ethyl Gasoline Corp. in the U. S. District court at Cleveland for alleged infringement of name, has filed an answer in which he admits doing business as the Ethyl Color & Chemical Co. and that he circularized the gasoline trade to sell a gasoline dye which was called "Ethyl Color." He denies there was any infringement of the name "Ethyl."

Mr. Beardslee in his answer contends the word "Ethyl" is a descriptive word and in common use, and that if it was registered by the U. S. Patent Office that the registration was illegal.

He contended that the chemical he sold was different from that of the Ethyl Gasoline Corp., that its advertising literature was different, and the container in which the chemical was sold was different, so there was no confusion in the minds of buyers between the Ethyl Color and the Ethyl fluid, the latter the product of the Ethyl Gasoline Corp.

CHICAGO, March 2.—C. L. Knopf, research lubrication engineer for the Sinclair Refining Co., East Chicago, Ind., is recovering from a severe accident sustained last November.

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Type GY

Type X-1

Type NJ

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Try the remarkable Aircraft Gasoline that starts cold engines fast . . . that greatly reduces the use of the choke . . . that eliminates engine balk, and eliminates gas locks, preventing jerky operation. It decreases the dilution of the motor oil in your crankcase. It is guaranteed to meet Army, Navy, and Bureau of Mines Specifications for Aviation Gasoline, domestic grade. You can fill up with Sinclair Aircraft Gasoline wherever you see the Sinclair Pump with the Aircraft Globe.

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ATLANTA BOSTON CHICAGO HOUSTON KANSAS CITY

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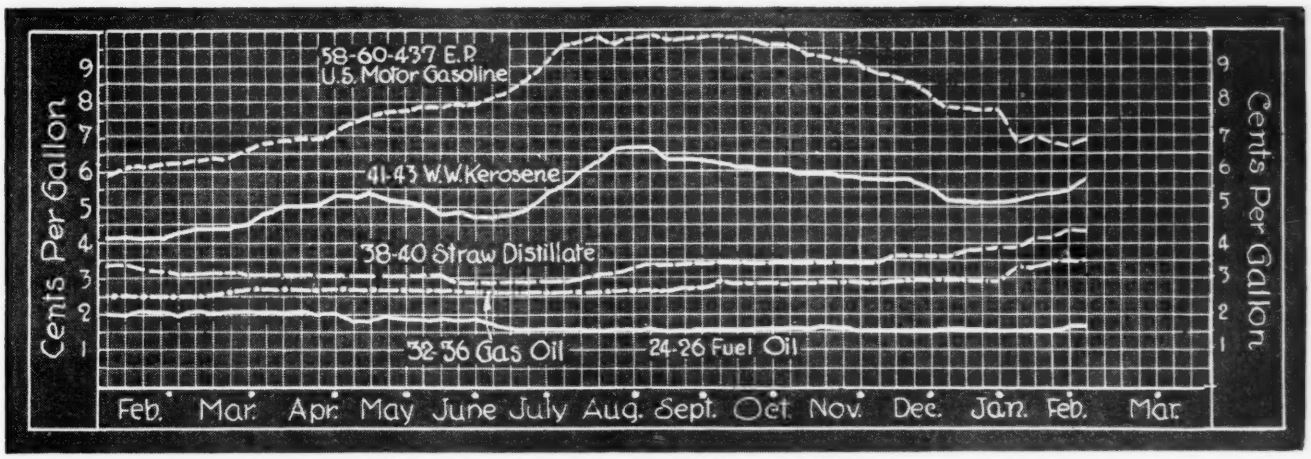
The ACE of HIGH TEST GASOLINES

Refinery - Tank Wagon Markets

National Petroleum News

Current Prices of Principal Mid-Continent Refined Products



Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

Gasoline and Kerosene Demand in Mid-Continent Has Improved

Staff Special
TULSA, March 2

GASOLINES and kerosenes swung into more prominence in the Mid-Continent refinery district the last week of February than they had occupied for several weeks past. Exporters were generally inactive, but domestic demand showed some improvement.

Heating oils continued to be in demand sufficiently for refiners to draw on stocks, but inquiries showed a slowing up with buying strictly on a hand to mouth basis.

Natural gasolines were in only light demand in most quarters and prices lost some ground.

Neutral oils and cylinder stocks were comparatively quiet with no changes in prices. Wax was in little demand for spot shipment and quotations ranged from 3.75 to 4.50 cents a pound, with majority of refiners quoting 3.75 to 4 cents.

Gasolines

All grades of refined gasolines gained some strength during the week. Weather conditions were reported improved in many portions of the middle west, and several refiners said jobbers were more willing to buy for five to 10 days shipment instead of in small lots and for immediate shipment. This was taken by many of the trade as an indication that jobbers either were finding consumption improved, or were about convinced the bottom of the market had been reached and were buying with a view to putting a small amount of their purchases in storage.

The west Texas refiners were reported to be less active in the Standard of Indiana territory than they had been during the previous months, this being due in part to large purchases of west Texas gasoline as mentioned in these columns in issue of Feb. 27.

Before the close of the week quotations on a Group 3 basis from areas outside of Oklahoma but in the Mid-Continent district were almost on a parity.

Virtually all of the 58-60 U. S. Motor gasoline which had been offered in Oklahoma around Feb. 27, 28 and March 1 at 6.50 cents a gallon had disappeared from the market by March 2, and the prevailing quotations ranged from 6.75 to 7 cents direct to the trade. Marketers reported more difficulty obtaining gasoline from Oklahoma plants at under 6.75 cents.

Kerosenes

All areas of the Mid-Continent had an improved kerosene demand. Kansas refiners reported their orders were better than they had experienced for several weeks. Oklahoma refiners in most instances were forced to draw on storage to fill orders. Prices in both Oklahoma and Kansas advanced fractionally.

North Texas refiners had sufficient business to keep their production moving, while in Louisiana at least one refiner who had not been making kerosene was forced to revise his operations to cut the goods since he was unable to buy his requirements from other refiners. Prices in Louisiana advanced from 0.25 to 0.50 cent a gallon, while in Arkansas the price advanced 0.25 cent with all refiners reporting they were virtually sold up for the next 10 days or two weeks.

Much of the buying was done by

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Guaranteed 100% PURE PENNSYLVANIA OIL
Permit No. 26

Oil City E
Warren E
Warren D
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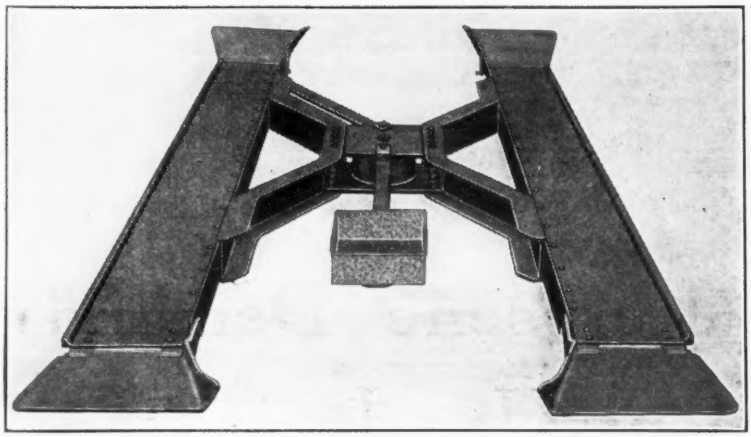

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jobbers who were preparing for the spring demand in the farming belt.

One Oklahoma refiner said Feb. 28 that his company at present had orders on the books for twice as much kerosene as he was planning to produce the first half of March, and that he would be forced to cut into his storage to get the orders filled.

Distillates, Gas Oil

Refiners continued to experience an active spot demand for both stove distillates and gas oils. The buying had swung away from a "ship as soon as you can or when you can" basis to one of "ship immediately." Weather conditions were sufficiently improved in many sections of the country to make the jobbers more cautious in their buying so they would not be caught with quantities of the goods in their storage tanks. The buying which was being done was at generally unchanged price levels. Many refiners in this district were of the opinion that except for an active immediate shipment business for the next two to four weeks, the distillate season especially was on the decline unless an extremely cold wave of some duration should sweep over the Middle west.

Fuel Oils

High gravity, low cold test fuel oils continued to be virtually unobtainable. Odd cars only were reported sold the past week and they moved at prices ranging from $1.15 to $1.30 according to how badly the buyer wanted the goods, or how persuasive he was in getting his refiner to blend the goods for him.

One company in Kansas which two weeks ago was completely sold up was reported this week, however, to be offering some goods for shipment over March.

Ordinary grades of fuel oils were in comparatively active demand with prices generally unchanged. Shipments in most districts continued to keep ahead of production to a certain extent.

Neutral Oils, Cylinder Stocks, Wax

No changes were made in prices for neutral oils or cylinder stocks. Bright stock was comparatively active but not as much as it was around the middle of January.

Several refiners making wax reported demand was light. Buyers were in most cases offering prices considerably lower than the refiners were willing to accept. A few refiners who had some stocks on hand, however, were quoting from 3.75 cents up for shipment over March. A few odd lot sales were reported at 4 to 4.50 cents a pound, but these were in the minority.

Natural Gasolines

Several large buyers of natural gasolines withdrew from the market late in the month and up to March

2 had showed no inclination to resume buying. Manufacturers for the most part were fairly well protected with contracts but there was a sufficient amount offered in small lots for the prices to swing downward by the first of the month.

For the first time in several weeks prices of grades A and AA and grades B and BB were together. The activity which had been displayed in grade A earlier in February had virtually subsided, since the largest buyer of this grade had completed his export order.

Would Ban Poisons In Gasoline

TULSA, March 2.—A bill which would prohibit the use of poisonous chemicals or poisonous substances in the manufacture of gasoline was introduced in the Oklahoma house of representatives Feb. 27 by Rep. Jones of Stephens county. It is House Bill No. 356.

Enforcement of the law would be a duty of the state Corporation Commission, the commission being empowered to have chemical analyses made on complaint of any individual. Violation would be made a misdemeanor punishable by a fine of $25 to $500 or imprisonment in the county jail from 10 to 90 days, or both.

Just who is back of this proposed act has not been definitely determined. Many refiners who have heard of the bill were of the opinion that it was an effort to stop the sale of Ethyl gasoline in Oklahoma. Others pointed out that under the provisions of the bill the use of sulfuric acid and other treating agents might be ruled out.

Three refining companies at present have contracts to make and sell Ethyl gasoline in Oklahoma. They are the Continental Oil Co. which operates a refinery at Sapulpa; Johnson Oil Refining Co., which has a plant at Cleveland, and Tidal Refining Co., which has a plant at Drumright. It is not known if other refiners have obtained licenses to blend Ethyl gasoline since the territory has been opened. None of the plants listed above as blending Ethyl gasoline are located in Stephens county. There are, however, two refineries in Stephens county, and several in adjoining counties.

Sinclair Buys Baxley Oil Co.

MACON, Ga., March 2.—Sinclair Refining Co., early in February bought the Baxley Oil Co. of Baxley, Ga., from the Georgia-Carolina Oil Co. of Macon. The purchaser got a bulk plant and two filling stations with a business approximating 25,000 gallons a month. Officials of the Georgia-Carolina Oil Co. decline to disclose the sales consideration.

Chicago Resale Market

Small Increase in Gasoline Prices

Staff Special
CHICAGO, March 2

BETTER demand for gasolines with resultant increase in prices was the feature of the week in the Chicago resale market. Nearly all sellers reported a better demand, although in most quarters the increase was light. Roads were still in bad shape in most sections of the Standard of Indiana territory but the mild temperature which prevailed most of the week was an influence in encouraging jobbers to buy for storage purpose.

Another factor on the bullish side of the picture was the announcement made March 1 by the Indian Refining Co. that they had purchased over 300 cars of U. S. Motor gasoline the past two or three days, mostly for delivery over the first half of March. The bulk of this gasoline was bought in Oklahoma, with some coming from other Mid-Continent areas and the rest from Louisiana, Ohio and Kentucky. The price paid was not announced.

Gasoline prices took an upward trend and the low range of the market was approximately .125 cent higher by the end of the week. The major Oklahoma refiners sold U. S. Motor gasoline throughout the week at 7c, while the smaller refiners and carlot marketers moved the bulk of their Oklahoma U. S. Motor at 6.625 to 6.75 cents until Feb. 28 and at 6.75 to 7 cents thereafter. A number of marketers reported that while some Oklahoma U. S. Motor was available for resale on March 2 at 6.625 cents, most refiners were asking them 6.75 cents for spot shipment and at least 7 cents for over March.

West Texas gasolines were also higher this week with most carlot marketers moving full specification Motor at the same price as their Oklahoma gasoline. They reported some U. S. Motor available for resale at 6.50 cents f.o.b. Group 3, but the bulk of refiners were asking 6.625 and 6.75 cents.

Higher gravity gasolines continued generally unchanged in price and demand. The 60-62, 437 e. p. grade moved mostly at 6.75 to 7.25 cents on Feb. 25 and 26 and at 6.875 to 7.25 cents from Feb. 27 until the end of the week. Sales of 60-62, 400 e. p. were mostly at 7.25 to 7.50 cents and of 64-66, 375 e. p. at 7.75 to 8 cents.

Demand for kerosene continued good in nearly all quarters. The majority of sellers reported that jobbers were filling at least part of their storage in anticipation of spring demand. Prices were up approximately .125 cent over the week. The 41-43 w. w. kerosene moved mostly at 5.50 to 5.75 cents after Feb. 28 and at 5.50 to 5.625 cents previously. Carlot marketers reported very little 41-43 w. w. was available for resale at 5.50 cents on March 2.

Divergent reports were heard on furnace and fuel oils. Some sellers reported that the mild weather had slowed down demand for the zero oils, while other sellers said they were still enjoying a heavy call for these grades. However, as nearly all refiners were behind on shipments the lightened demand was not apparent enough to cause any drop in prices. Very little distillate, straw gas oil or 28-30 zero fuel oil was available and these grades were still quoted nominally by most sellers.

With the exception of 28-30 zero fuel oil, which opened Feb. 25 at $1.10 to $1.175 and moved mostly at $1.15 to $1.175 after Feb. 28, prices of distillates, gas and fuel oils were generally unchanged over those shown in the NATIONAL PETROLEUM NEWS of Feb. 27.

The weather will be mostly fair in the Standard of Indiana territory next week with precipitation likely occasionally especially in the Lakes region. Temperatures will probably remain close to the seasonal normal all week.

Accidents Mar Trip Abroad

CHICAGO, March 5.—George D. Locke, vice president of the Barnsdall Refineries, Inc., and Mrs. Locke have just returned from a trip abroad. However, luck was not with them. During a rough sea on board ship going over, Mrs. Locke fell and broke her arm. She made part of the trip that they had planned but immediately on her return went to the hospital at Evanston, Ill.

The last night they were in Paris before sailing, the hotel caught fire. Mr. and Mrs. Locke had to join the half-dressed crowd on the street while it was being put out.

Robert S. King, president of the Refiners Oil Co., of Dayton, Ohio, and Mrs. King were on the same ship going over and they continued on a Mediterranean trip.

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

Weighted Average Prices

OKLAHOMA (Weighted Average Prices)

	Prices Mar. 4	Prices Feb. 25	Prices Feb. 18
58-60 U.S. Motor, 437 e.p.	6.9412	6.7813	6.9858
60-62 437 e.p. gasoline...	7.2652	7.3083	7.2500
60-62 400 e.p. gasoline...	7.3750	7.4375	7.4375
64-66 375 e.p. gasoline...	8.2917	8.2250	8.0833

All above weighted average prices are effective on Monday on the dates shown at the top of the columns.

WHILE the above weighted average prices do not reflect the steadier tone in the Oklahoma refinery market, the range of prices from which these averages are figured indicates buying the past week was considerably better than had prevailed for the past several weeks. The price range of reporting refiners was narrower, while the few small refiners who do not report daily sales had quotations generally in line with those of reporting refiners.

Improved weather conditions in much of the Middle West was considered one of the major contributing factors to the improved tone in the market.

KANSAS (Weighted Average Price)

	Prices Mar. 4	Prices Feb. 25	Prices Feb. 18
58-60 U.S. Motor 437 e.p.	7.1468	7.2500	7.2292

KANSAS refiners also experienced a better demand for gasolines from buyers within the state while the price range at which the gasoline moved was generally unchanged throughout the week.

(The Oklahoma weighted average prices above are made up from confidential daily reports on all gasoline spot market sales—for shipment in 10 days—from Oklahoma refineries representing 82.6 per cent of the state's refining capacity. The Kansas weighted average prices above are made up from confidential daily reports of all gasoline spot market sales from Kansas refineries representing 58 per cent of the state's operating capacity. The above prices do not include prices on sales for "over the month," for contracts, or to brokers or on shipments to company owned stations. Records of the reporting refiners are checked periodically to verify the accuracy of their reports.—Editor)

OKLAHOMA	Prices Mar. 4	Prices Feb. 25	Prices Feb. 18
48-50 450 e.p. naphtha...	†6.50 – 6.75	†6.50 – 6.75	†6.50 – 6.75
50-52 450 e.p. naphtha...	†6.50 – 6.75	†6.50 – 6.75	†6.50 – 6.75
56-58 450 e.p. gasoline...	6.625– 6.875	6.625– 6.875	6.625– 6.875
58-60 450 e.p. gasoline...	6.875– 7.00	6.875– 7.00	6.875– 7.00
64-66 390 e.p. gasoline...	7.50 – 7.75	7.50 – 7.75	7.75
68-70 350-360 e.p. gasoline	8.00 – 8.50	8.00 – 8.50	8.50
PENNSYLVANIA			
52-54 Naphtha.....	8.50 – 9.00	8.50 – 9.00	8.25 – 8.75
54-56 Naphtha.....	8.75 – 9.00	8.50 – 9.00	8.25 – 9.00
58-60 U.S. Motor 437 e.p.	9.00 – 9.50	9.00 – 9.50	9.25 – 9.50
60-62 400-410 e.p. gasoline	9.50 –10.25	9.625–10.00	9.75 –10.25
64-66 390 e.p. gasoline...	9.75 –11.00	10.25 –11.00	10.00 –11.00
68-70 Str-run gas 350-360 e.p.....	10.50 –11.75	11.25 –11.75	11.25 –11.75
OHIO (Quotations of S. O. Ohio. 3c state tax to be added.)			
‡U. S. Motor Gasoline: Cleveland, Toledo, & Lima switching districts	9.75	.....	.....
Elsewhere in Ohio.....	10.00	10.00	10.00
‡Winter specification.			
KANSAS (F. O. B. refinery Kansas destination)			
60-62 400 e.p. gasoline....	7.75	7.75	7.50
64-66 375 e.p. gasoline ...	8.25 – 8.50	8.25 – 8.50	8.25
NORTH TEXAS			
48-52 450 e.p. naphtha...	†6.25	†6.25	†6.375
56-58 450 e.p. gasoline...	†6.25	†6.25	†6.375
58-60 450 e.p. gasoline...	†6.25	†6.25	†6.375
58-60 U.S. Motor 437 e.p.	6.75 – 7.00	6.75 – 7.00	6.75
60-62 400 e.p. gasoline...	7.25	7.25	7.25
64-66 390 e.p. gasoline...	7.25 – 7.375	7.25 – 7.375	7.50
64-66 375 e.p. gasoline...	7.75 – 7.875	7.75 – 7.875	7.875– 8.00
68-70 350-360 e.p. gasoline	7.75 – 8.25	7.75 – 8.25	8.50

	Prices Mar. 4	Prices Feb. 25	Prices Feb. 18
****WEST TEXAS (F.o.b. West Texas refinery, for unrestricted shipment)**			
50-52 naphtha.....	5.875	5.875	5.875– 6.00
56-58, 437 e.p. gasoline..	6.00	6.00	6.00 – 6.125
58-60, 437 e.p. gasoline..	6.125– 6.50	6.125– 6.50	6.125– 6.50
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
58-60 U.S. Motor gasoline	7.25	7.00	7.00
ARKANSAS (Arkansas destination only)			
56-58 450 e.p. gasoline...	6.50	6.50	6.50
58-60 450 e.p. gasoline...	6.75	6.75	6.75
58-60 U.S. Motor 437 e.p.	7.25	7.00	7.00
‡CALIFORNIA			
54-58 U.S. Motor 437 e.p.	5.50 – 6.50	6.50 – 8.50	8.00 –12.50
58-61 375-400 e.p. gasoline	7.50 – 8.50	7.50 –10.00	10.00 –13.50
42-45 Eng. dis. 445-480 e.p.....	7.00 – 8.00	6.50 – 7.50	7.50 – 8.50

‡3c tax to be added to California gasoline prices if used in state.

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA

Grade AA, 80-87.9, 90% Recovery.....	**6.875– 7.00	7.50 – 7.625	7.00
Grade A, 72-79.9, 90% Recovery.....	**6.875– 7.00	7.75	7.50 – 8.00
Grade BB, 84-92, 85% Recovery.....	**6.00	**6.50	5.75 – 6.00
Grade B, 76-83.9, 85% Recovery.....	**6.00	**6.50	5.75 – 6.00
Grade C, 80-92, 78% Recovery.....	**5.375– 5.50	**5.75 – 6.00	5.50 – 5.75

Comparative Prices of 58-60 U. S. Motor Gasoline, Group 3 and Point of Origin, to Jobbers Only, in Effect Mar. 4

	Price F.O.B Group 3	Price F.O.B. Point of Origin	If for Particular Destination
Oklahoma	6.9412 (Wt. Avg.)	6.9412 (Wt. Avg.)	..... S. O. Neb. & Ind. Territories, etc.
Kansas	6.75-7.00	.....	
Kansas	7.1458 (Wt. Avg.)	7.1468 (Wt. Avg.)	Kansas only.
North Texas	6.75-7.00	6.75-7.00	.....
West Texas	6.375-6.50	6.125-6.50	.....
Louisiana-Ark.	6.75-7.00	.....	Mich., Ohio & Indiana.
Louisiana-Ark.	.....	7.25	State or differential haul.
Indiana-Illinois	7.00	.....*	S. O. Ind. territory except Detroit and vicinity. For Ohio on delivered basis only.

*Shipments made from E. Chicago, Ind., and Wood River, Ill., according to conditions and freight rates; no prices F.O.B. point of origin can be given.

Note—The above comparative price basis given for the convenience of the trade. We have endeavored for the past several years to cause the trade to appreciate the difference between prices quoted f.o.b. Group 3 where the product originates and as shipped from a refinery district outside of Oklahoma. As the trade still persists in basing prices on products to be shipped from points outside of Oklahoma, Group 3, we give the above table for its convenience.

However, in giving the above prices, please note particularly not only the point of origin, but the destination of the shipments. Prices, especially from those districts outside of Group 3 Oklahoma, vary quite materially according to the marketing district into which the gasoline is to be shipped. The prices that we give in the above table are for the best known marketing districts to which these refiners ship but, owing to the wide variation in freight rates and marketing conditions in the various districts, we do not guarantee any of the above prices.

†Prices nominal ††Only one refiner quoting *Quotations only **Represents both sales and quotations

When You Compare These Prices, Please

In interpreting and comparing the prices on these pages the industry must do so fairly and, in turn, accurately.

Please Note—

1st—The date of these prices and those with which you compare them.

2nd—The source of origin of the material—that is the actual geographical district from which the material will really be shipped.

3rd—The destination of the goods which has a great deal to do with the price.

4th—The specifications of the material. There is not much off specification stuff on the market but what little there is is not always identified as such and the price that it bears generally gets a lot of free advertising.

5th—The terms of the sale. Prices given herein, except where otherwise noted, are for spot sale and shipment within ten days. Other terms will make a difference in the price.

6th—The quantity that is available, or is sold, at a given price. Generally the bottom price of the market—and oftentimes the top price too—has only one or two cars moving on it. When the seller who has offered those particular cars has sold them, he and his low price are generally out of the market.

7th—These prices are records of sales actually made, or if no sales, then they are quotations by reputable companies on the days noted. They are arrived at at the close of the business day. What the prices will be on the next day depends entirely upon what the seller and buyer do. These prices are the history of yesterday. Tomorrow is a new day.

4th—The specifications of the material.

There is only a negligible amount of down right misrepresentation of specifications on petroleum products. The industry has a fine record of honest and straightforward dealing in this regard. But there are some cases occasionally where goods are misrepresented and almost invariably the price is lower than that of reputable sellers of material fully up to specifications.

A low price spreads rapidly among buyers, and even though the seller may have taken the pains to show that the goods thus priced were a bit off specifications, that fact is generally lost sight of in passing the low price information around. And of course there are always some buyers, unfortunate as that may be, who are not above trying to hammer down a refiner's price with the low price of off-specification goods but who carefully refrain from giving that last information to the refiner.

When there is anything unusual about the lowness of a price it is most advisable to inquire particularly regarding the specifications of the goods and then if one buys, to inspect the goods carefully before accepting them.

The price gathering organization of NATIONAL PETROLEUM NEWS and THE OILGRAM know pretty well who is likely to put out off specification products, either purposely or by accident, and the organization is constantly on the alert when a low price appears from any of these few companies. A check is at once made and either the low price is ignored or the fact that the goods are off-grade is prominently noted in the report to the trade, if that is the case.—Editor.

Refinery Markets on Wax, Lubricants and Heavy Oil Products, (Continued)

NATURAL GASOLINE, Continued

NORTH TEXAS (F. O. B. Breckenridge)

	Prices Mar. 4	Prices Feb. 25	Prices Feb. 18
Grade AA, 80-87.9, 90% Recovery	**6.875- 7.00	7.50 - 7.625	7.00
Grade A, 72-79.9, 90% Recovery	**6.875- 7.00	7.75	7.50 - 8.00
Grade BB, 84-92, 85% Recovery	**6.00	**6.50	5.75 - 6.00
Grade B, 76-83.9, 85% Recovery	**6.00	**6.50	5.75 - 6.00
Grade C, 80-92, 78% Recovery	**5.375- 5.50	**5.75 - 6.00	5.50 - 5.75
NORTH LOUISIANA (F. O. B. Monroe District)			
Grade AA	†7.50	†8.00	†7.25
Grade BB	†6.50	†6.75	†5.50
Grade C	†6.00	†6.25	†5.375
CALIFORNIA			
75-85, 375-390 e.p. blend	5.00 - 6.00	6.50 - 7.00	7.00 - 7.50

†Prices nominal ††Only one refiner quoting *Quotations only

MOTOR FUEL BLENDS

OKLAHOMA

	Prices Mar. 4	Prices Feb. 25	Prices Feb. 18
64-66 Blend 437 e.p.	6.75	6.75	6.75

BURNING OILS

PENNSYLVANIA

45 w.w. kerosene	7.00 - 7.375	7.00 - 7.375	7.125- 7.25
46 w.w. kerosene	7.25 - 7.625	7.25 - 7.75	7.50 - 7.75
47 w.w. kerosene	7.625- 8.00	7.625- 8.00	7.50 - 8.00
300 mineral seal	7.25 - 7.875	7.25 - 7.75	7.25 - 7.50
OKLAHOMA			
41-43 w.w. kerosene	5.50 - 5.75	5.50	5.25 - 5.50
42-44 w.w. kerosene	6.25	6.00 - 6.25	6.00
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene	5.75 - 6.00	5.75 - 6.00	5.75 - 6.00
42-44 w.w. kerosene	6.25 - 6.50	6.25 - 6.50	6.25 - 6.50

**Represents both sales and quotations

Refinery Markets on Wax, Lubricants and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

BURNING OILS, Continued

NORTH TEXAS	Prices Mar. 4	Prices Feb. 25	Prices Feb. 18
40-42 w.w. kerosene	5.375	5.25	5.25
41-43 w.w. kerosene	5.50 – 5.625	5.50 – 5.625	5.50 – 5.625
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
41-43 w.w. kerosene	6.25	5.75	5.75
42-44 w.w. kerosene	††6.50	††6.25	††6.25
ARKANSAS (Arkansas destination only)			
42-44 kerosene	6.50	6.25	6.25
CALIFORNIA			
38-40 w.w. kerosene	6.00 – 6.50	6.00 – 6.50	6.50 – 7.00

NEUTRAL OIL

PENNSYLVANIA Vis.			
	(Viscosity at 70°F.)		
200 No. 3 Assoc. Filt.	27.25 –29.00	28.00 –29.00	27.50 –29.00
180 No. 3 Assoc. Filt.	24.00 –26.00	25.00 –26.00	24.50 –26.00
150 No. 3 Assoc. Filt.	20.50 –21.50	21.00 –22.00	21.00 –22.00
	(Non Viscous)		
34 Grav. 330-340 Flash	7.25 – 9.00	7.25 – 8.00	7.25 – 8.00
****OKLAHOMA**			
Vis. Color	(Viscosity at 100°F.)		
100—No. 2	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00
150—No. 3	7.50 – 8.50	7.50 – 8.50	7.50 – 8.50
150—No. 4	6.50 – 7.50	6.50 – 7.50	6.50 – 7.50
180—No. 3	8.75 – 9.50	8.75 – 9.50	8.75 – 9.50
180—No. 4	8.75 – 9.75	8.75 – 9.75	8.75 – 9.75
180—No. 5	8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
200—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 4	9.25 –10.00	9.25 –10.00	9.25 –10.00
200—No. 5	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
220—No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220—No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240—No. 3	13.00 –13.50	13.00 –13.50	13.00 –13.50
240—No. 4	12.00 –13.00	12.00 –13.00	12.00 –13.00
240—No. 5	11.00 –13.00	11.00 –13.00	11.00 –13.00
280—No. 3	14.00 –15.50	14.00 –15.50	14.00 –15.50
280—No. 4	13.00 –14.00	13.00 –14.00	13.00 –14.00
280—No. 5	12.00 –13.00	12.00 –13.00	12.00 –13.00
300—No. 5-6	15.00 –17.00	15.00 –17.00	15.00 –17.00
GULF COASTAL			
Vis. Color	(Viscosity at 100°F., pour test 0)		
100—No. 2 Pale	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
200—No. 3 Pale	9.50 –10.00	9.50 –10.00	9.50 –10.00
300—No. 3 Pale	10.50 –11.00	10.50 –11.00	10.50 –11.00
500—No. 3½ Pale	12.00 –12.50	12.00 –12.50	12.50 –13.00
750—No. 4 Pale	14.50 –15.00	14.50 –15.00	15.00 –15.50
200—No. 5½ Red Oil	8.00 – 8.50	8.00 – 8.50	8.50 – 9.00
300—No. 5½ Red Oil	9.00 – 9.50	9.00 – 9.50	9.25 – 9.75
500—No. 6 Red Oil	10.50 –11.00	10.50 –11.00	10.50 –11.00
750—No. 6 Red Oil	13.00 –13.50	13.00 –13.50	13.00 –13.50
CALIFORNIA			
Vis. Color	(Viscosity at 100°F.)		
100—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 3	11.50	11.50	11.50
300—No. 3	13.00	13.00	13.00
450—No. 3	15.50	15.50	15.50
550—No. 3	16.50	16.50	16.50
600—No. 3	17.00	17.00	17.00
200—No. 5	11.00	11.00	11.00
300—No. 5	12.00	12.00	12.00
400—No. 5	14.00	14.00	14.00
500—No. 5	15.00	15.00	15.00
600—No. 5	16.00	16.00	16.00
700—No. 7	18.00	18.00	18.00

CYLINDER STOCKS

****OKLAHOMA**			
190-200 Vis. at 210° Brt. St.	33.00	33.00	33.00
150-160 Vis. at 210° Brt. St.	31.00	31.00	31.00
600 E. St. 140-150 Vis.-210°	18.00 –19.00	18.00 –19.00	18.00 –19.00
600 St. Ref. Olive Green	10.00 –12.00	10.00 –12.00	10.00 –12.00
600 St. Ref. Dark Green	8.00 –10.00	8.00 –10.00	8.00 –10.00
Black Oil	5.00	5.00	5.00
PENNSYLVANIA	(1-inch Immersion Test)		
600 Steam Refined dark	‡‡21.00–22.00	‡21.50	21.50 –22.00
600 Steam Refined, filterable	22.00 –23.50	22.50 –24.00	22.00 –24.50
650 Steam Refined	27.50 –29.50	28.00 –29.50	27.00 –29.00
600 Flash	29.00 –32.00	30.00 –32.00	28.50 –32.00
625 Flash	‡38.00	‡36.00	‡36.00
600 Warren E	24.00 –25.50	25.00 –25.50	25.00 –25.50
600 Oil City E	23.00 –27.00	24.50 –27.00	24.00 –27.00
600 D Filtered	29.00 –29.50	29.00	28.50 –29.50
Cold Test Stock, 40-50p. p., 140-150 vis. at 210° 540-550 flash, No. 8 color	39.00 –42.00	38.50 –42.00	37.50 –42.00
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	37.00 –39.00	36.00 –39.00	35.50 –39.00

‡One seller quoting. ‡‡Two sellers quoting.

WAX

PENNSYLVANIA Per pound, New York	Prices Mar. 4	Prices Feb. 25	Prices Feb. 18
122-124 white crude scale, a. m. p.	3.75 – 4.00	3.50 – 4.00	3.75 – 4.25
124-126 white crude scale, a. m. p.	3.875– 4.125	3.75 – 4.125	4.125
‡One seller quoting.			
OKLAHOMA			
**124-126 White Crude Scale, a. m. p.	3.75 – 4.00	4.50	3.75 – 4.50
CALIFORNIA			
White crude scale, per pound, ton lots, a. m. p.	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)			
36-40 fuel oil	5.00 – 5.25	4.75 – 5.00	4.875– 5.00
30-34 fuel oil	4.625– 4.875	4.625– 4.875	4.625– 4.75
28-32 fuel oil	4.625– 4.75	4.75 – 4.875	4.50 – 4.625
OKLAHOMA			
38-40 straw distillate	†4.25 – 4.50	†4.25 – 4.50	4.00 – 4.125
36-38 straw distillate	†4.00 – 4.25	†4.00 – 4.25	3.75 – 3.875
32-36 gas oil, straw	‡3.50	‡3.50	‡3.25 – 3.375
32-36 dark gas oil	‡3.25 – 3.50	‡3.25 – 3.50	‡3.00
28-30 fuel oil (in bbls.)	†$1.25 – 1.30	†$1.05 – 1.10	$0.95 – 1.00
26-28 fuel oil (in bbls.)	$0.725– 0.825	$0.725– 0.825	$0.70 – 0.725
24-26 fuel oil (in bbls.)	$0.675	$0.675	$0.625– 0.675
22-26 fuel oil (in bbls.)	$0.575– 0.625	$0.575– 0.625	$0.575– 0.625
18-22 fuel oil (in bbls.)	$0.525– 0.575	$0.525– 0.575	$0.525– 0.575
16-18 fuel oil (in bbls.)	$0.525– 0.55	$0.50 – 0.525	$0.525– 0.55
14-16 fuel oil (in bbls.)	$0.50 – 0.55	$0.475– 0.50	$0.50 – 0.55
‡Zero cold test gas oil sells for 0.25 cent higher.			
KANSAS (F. O. B. refinery Kansas destination)			
38-40 straw distillate	4.375– 4.50	4.375– 4.50	4.25 – 4.375
36-38 straw distillate	4.25	4.25	4.00 – 4.125
32-36 gas oil	3.50	3.50	3.25
24-26 fuel oil	*$0.90	*$0.90	*$0.90
18-22 fuel oil	*$0.75	*$0.75	*$0.75
NORTH TEXAS			
38-40 straw distillate	4.00 – 4.25	4.00 – 4.25	3.875– 4.00
32-36 gas oil, cracked	3.00	3.00	2.75 – 3.00
32-36 St. reduced gas oil	3.00	3.00	2.75 – 3.00
24-26 fuel oil (in bbls.)	$0.725– 0.75	$0.725– 0.75	$0.725– 0.75
20-24 fuel oil	$0.70 – 0.725	$0.70 – 0.725	$0.70 – 0.725
****WEST TEXAS (F.o.b. West Texas refinery, for unrestricted shipment)**			
34-38 gas oil	3.00 – 3.25	3.00 – 3.25	3.00
30-32 gas oil	2.875– 3.00	2.875– 3.00	2.625– 3.00
18-22 fuel oil	$0.35 – 0.45	$0.35 – 0.45	$0.35 – 0.45
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
32-36 gas oil, dark	3.375– 3.50	3.375– 3.50	3.375– 3.50
32-36 gas oil, straw	3.50	3.50	3.50
16-20 fuel oil (in bbls.)	$0.725	$0.70	$0.70
ARKANSAS (Arkansas destination only)			
32-36 gas oil, straw	3.50	3.50	3.375
32-36 gas oil	3.25 – 3.50	3.25	3.25
28-32 gas oil	3.25	3.125	3.00
CALIFORNIA (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more)			
14-18 fuel oil (per bbl.)	$0.45 –$0.65	$0.45 –$0.65	$0.45 –$0.65
14-18 Bunker oil (per bbl.)	$0.70 –$0.85	$0.70 –$0.85	$0.70 –$0.85
30-34 gas oil (per bbl.)	$0.95 –$1.05	$0.90 –$1.00	$0.90 –$1.00
27 Plus Diesel oil (per bbl.)	$0.875–$1.00	$0.90 –$1.00	$0.90 –$1.00

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f. o. b. refinery. In tank cars ½c to ¾c per pound less.) Two refiners quoting.			
Snow White	8.50	8.50	8.50 – 8.75
Lily White	7.50 – 7.625	7.50 – 7.625	7.625– 7.75
Cream White	6.50 – 6.625	6.50 – 6.625	6.625– 6.75
Light Amber	3.625	3.625	3.625– 3.875
Amber	3.375	3.375	3.375– 3.625
Red	3.125	3.125	3.125

PETROLEUM COKE

****OKLAHOMA**

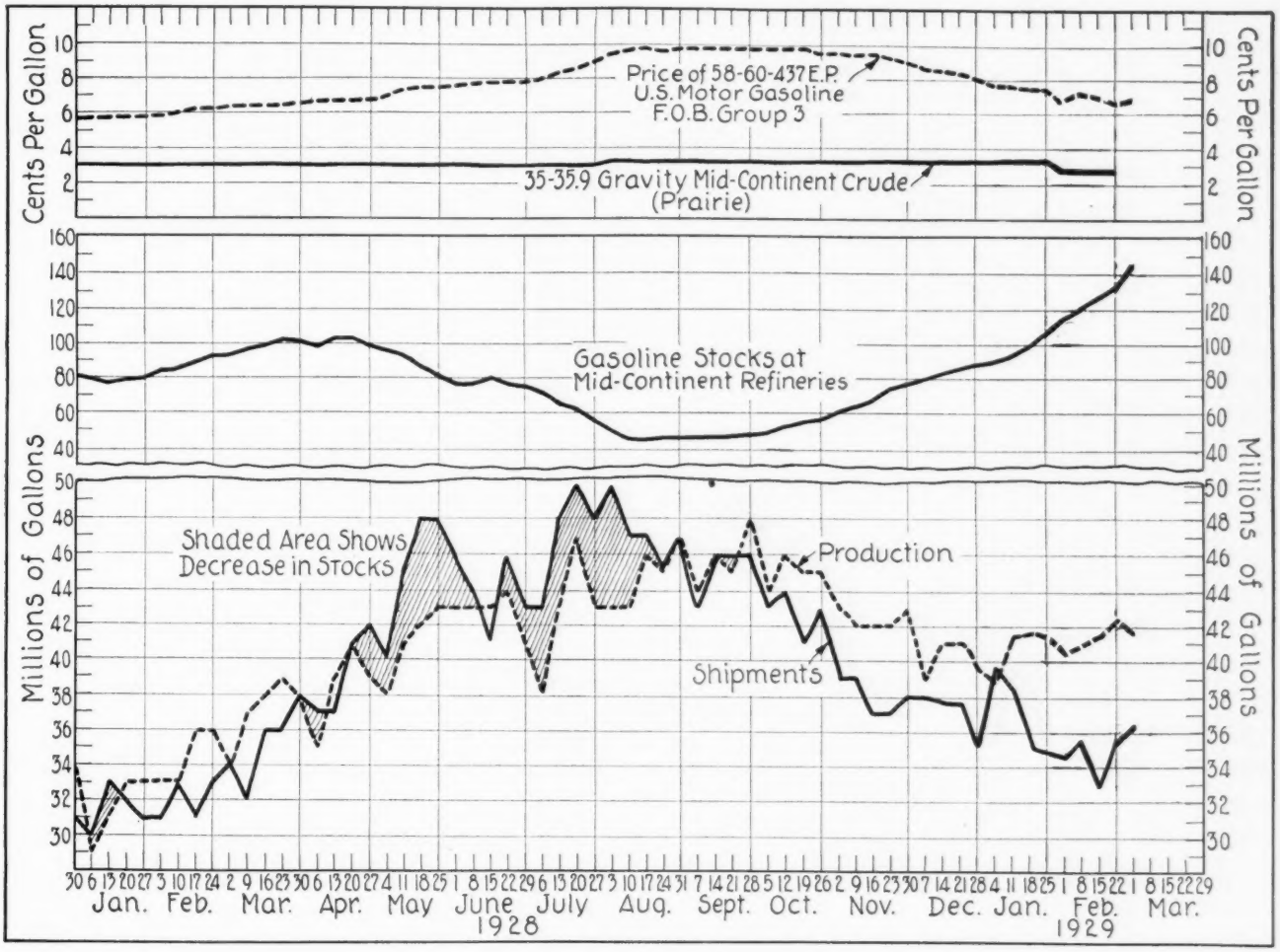
(Per ton in car lots)

Lump	$4.50 –$5.00	$4.50 – 5.00	$4.50 – 5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

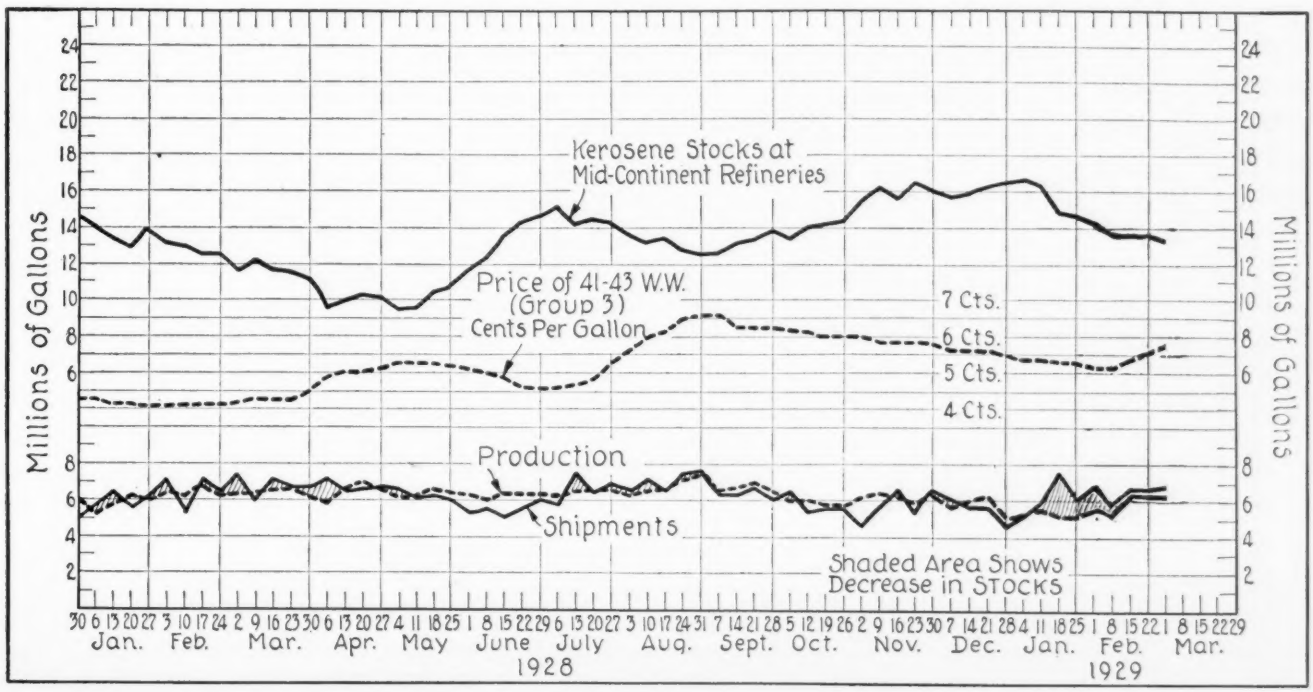
†Prices Nominal ††Only One Refiner Quoting *Quotations only **Represents Both Sales and Quotations.

Barometer of Mid-Continent Refinery Market—Week Ending March 1

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 90 Plants to National Petroleum News


Cents Per Gallon
Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Gasoline Stocks at Mid-Continent Refineries
Millions of Gallons
Shaded Area Shows Decrease in Stocks
Production
Shipments
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.
1928
1929

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 98



Barometer of Mid-Continent Refinery Market—Week Ending March 1

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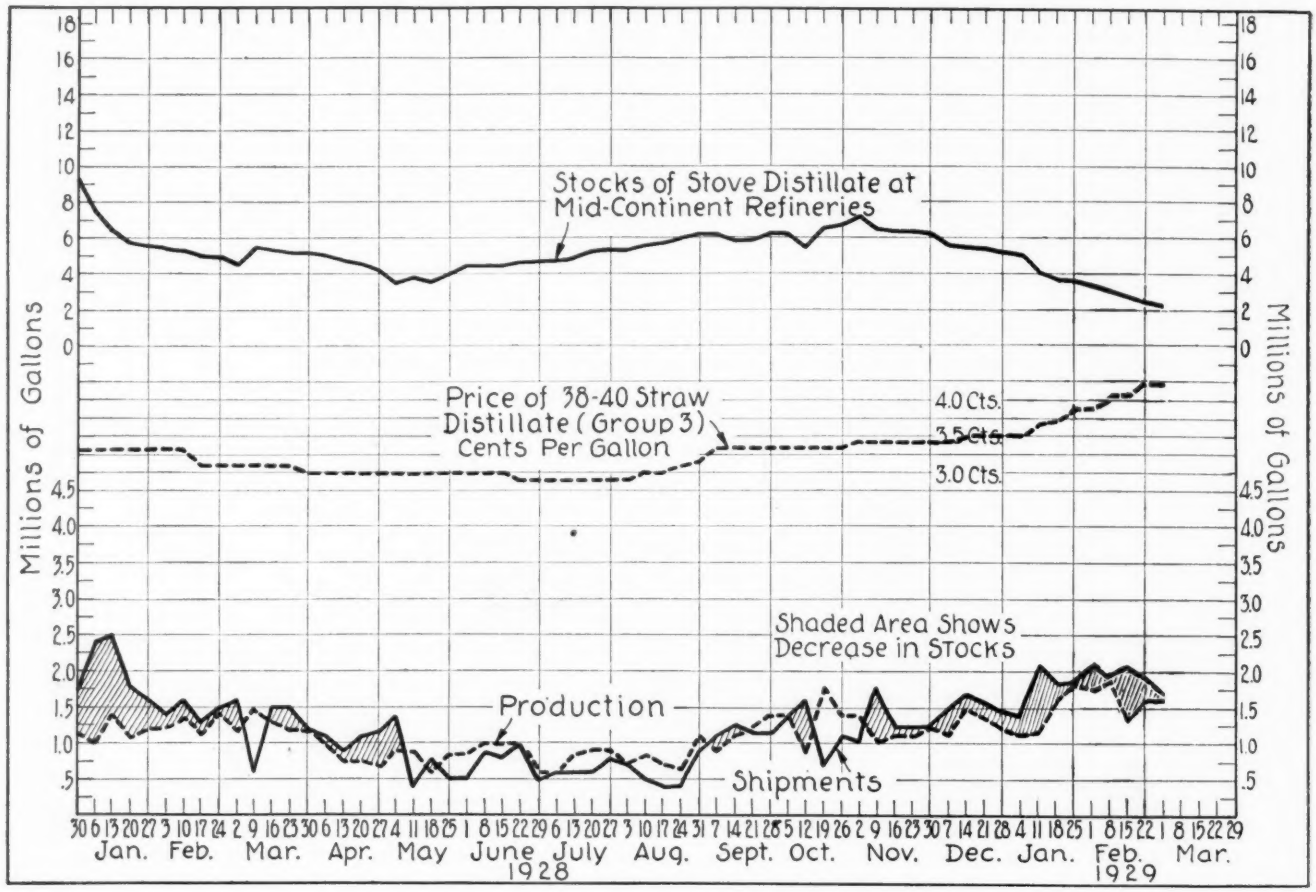
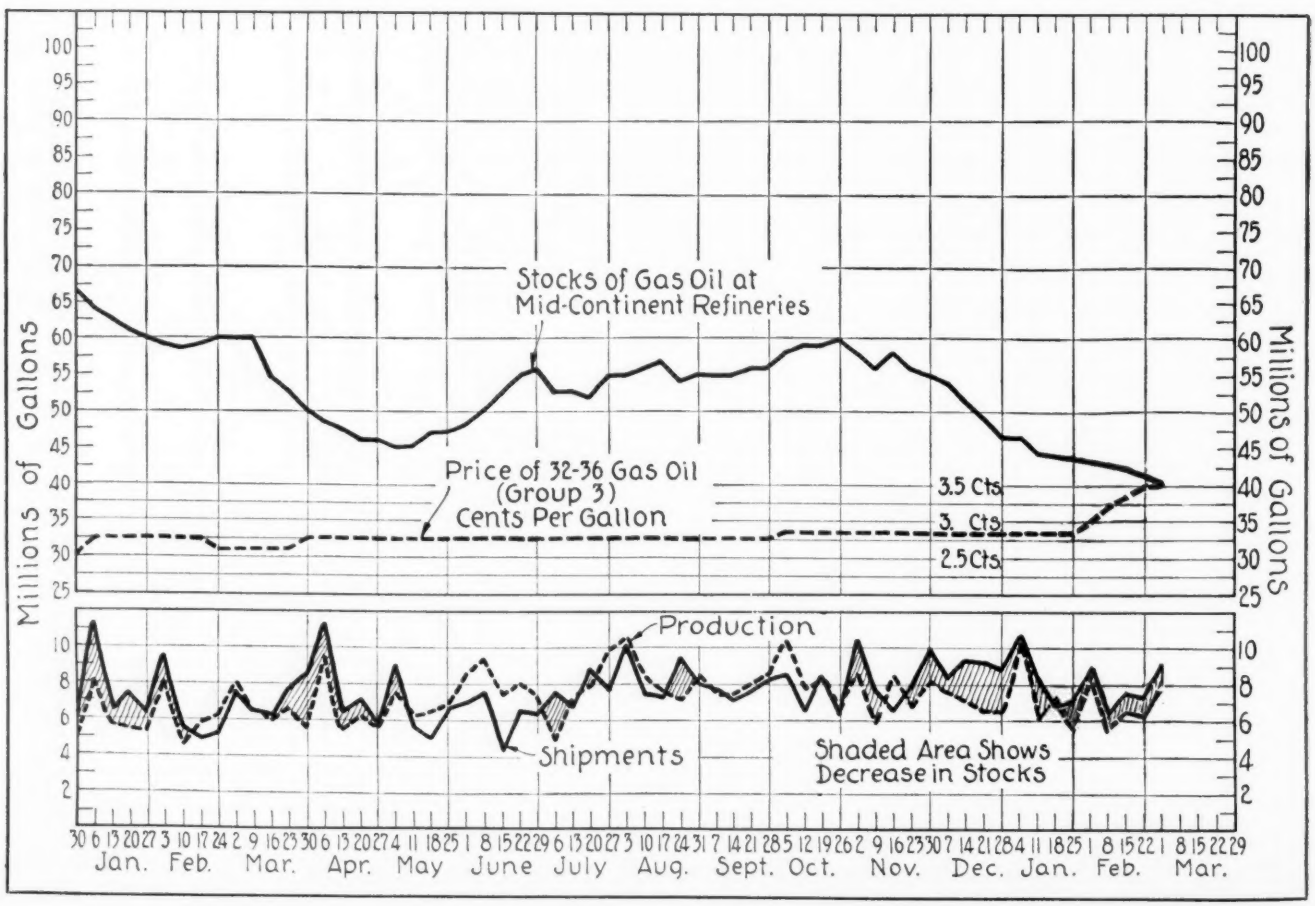

Stocks of Stove Distillate at Mid-Continent Refineries
Millions of Gallons
Price of 38-40 Straw Distillate (Group 3) Cents Per Gallon
4.0 Cts.
3.5 Cts.
3.0 Cts.
Shaded Area Shows Decrease in Stocks
Production
Shipments
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.
1928
1929


Stocks of Gas Oil at Mid-Continent Refineries
Millions of Gallons
Price of 32-36 Gas Oil (Group 3) Cents Per Gallon
3.5 Cts.
3. Cts.
2.5 Cts.
Production
Shipments
Shaded Area Shows Decrease in Stocks
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.

FREEDOM

100% Pennsylvania Motor Oil

—*guaranteed by the complete refinery which makes it*

Just as buyers of machinery prefer their purchases covered by one guarantee, you can buy Freedom 100% Pennsylvania Motor Oils on the same basis.

All elements which go into these exceptional products are refined by this one complete organization, The Freedom Oil Works Company, in its two plants, at Freedom and at Coraopolis, Penna.

At Freedom, is refined the wonderful 100% Pennsylvania Crude Neutrals which are used *exclusively*.

At Coraopolis, is refined the exceptional 450 Bright Stock (Sharples Process) which also is used *exclusively*.

Then the two are blended to high specifications by this 50 year old organization — you get a complete line of oils, consequently, that attracts business and HOLDS it.

Immediate deliveries can be made in tank cars, in compartment cars, barrels, or drums.

Guaranteed
100% PURE PENNSYLVANIA OIL

Permit No. 31

Also available for immediate shipment

450 Bright Stock (Sharples Process) which requires less neutral to blend to the ordinarily required specifications.

100% Pennsylvania Motor Oils, *blended to your own Specifications*, from Freedom 450 Bright Stock and Freedom 100% Pennsylvania Crude Neutrals.

Freedom Quality Stocks
600 Steam Refined
635 Steam Refined
650 Steam Refined

Freedom 300 Mineral Seal Oil made to Railroad Specifications.

Freedom Filtered Burning Oils.

The Freedom Oil Works Company
Freedom, Penna.

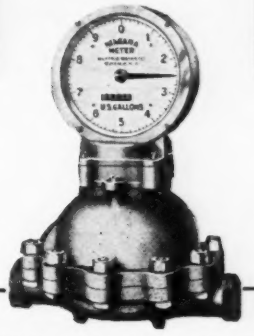
Established 1879
Refineries at Freedom and Coraopolis, Pennsylvania

FREEDOM

ACCURACY

Regardless of how much or how little gasoline or oil passes through a Niagara meter, it accurately registers and records, preventing loss, theft or favoritism.

And a Niagara repays its cost by enabling you to sell and profit on the gasoline and oil that would be unaccounted for without a meter! Send today for our newest catalogue.



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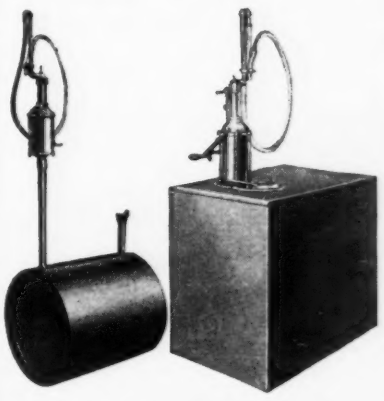
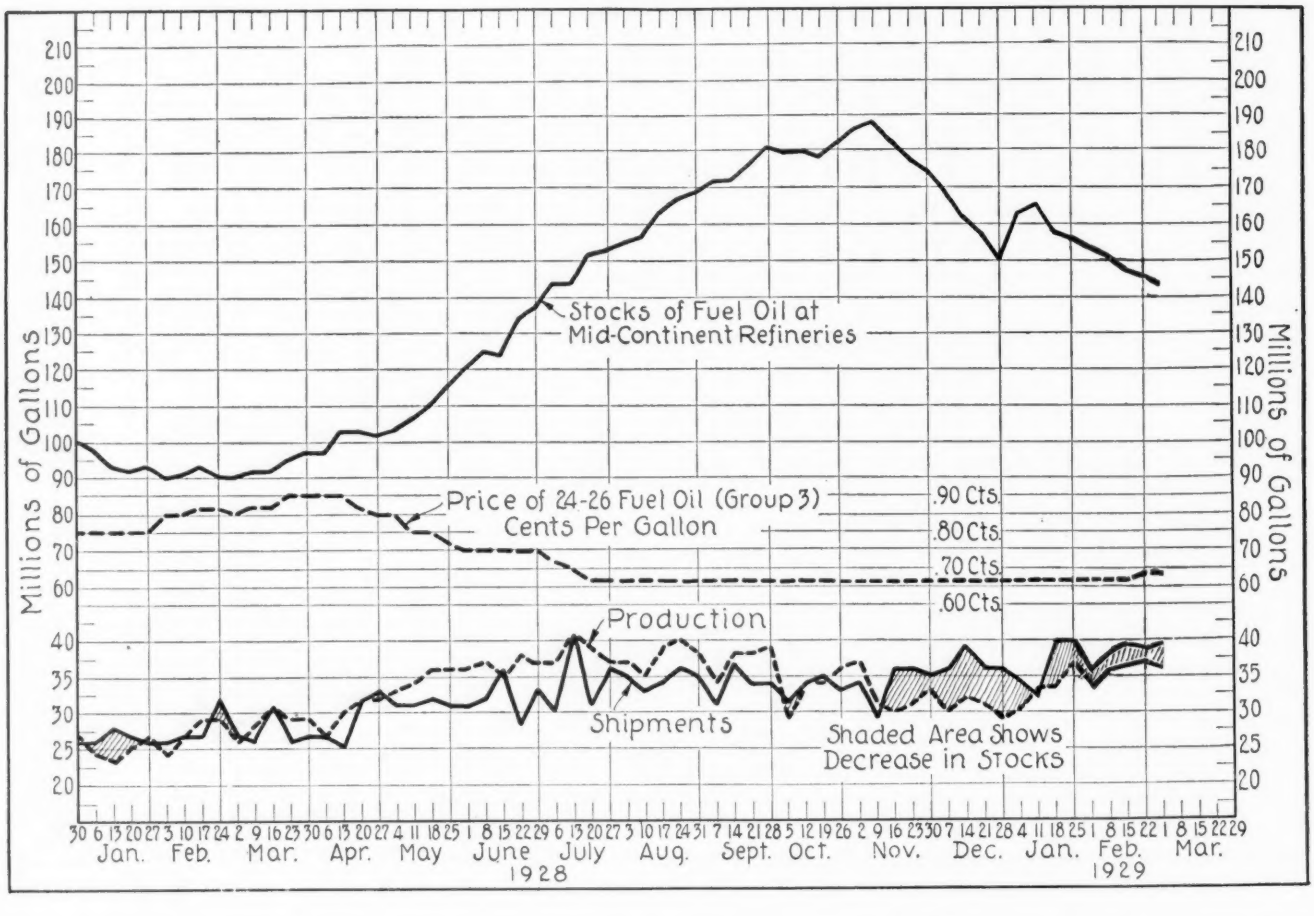


Dept. G. VOLCKER MFG. CO.
Huntington Indiana

Barometer of Mid-Continent Refinery Market—Week Ending March 1

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 90 Plants to National Petroleum News


Millions of Gallons
Millions of Gallons
Stocks of Fuel Oil at Mid-Continent Refineries
Price of 24-26 Fuel Oil (Group 3) Cents Per Gallon
.90 Cts.
.80 Cts.
.70 Cts.
.60 Cts.
Production
Shipments
Shaded Area Shows Decrease in Stocks
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.
1928
1929

California Refinery Market

Export Gasoline Prices Unchanged

Staff Special

LOS ANGELES, Feb. 28

THE California export market has had no particular strength during the past week. It was reported that a little bunker oil was sold at a rather low figure of about 60 cents per barrel at seaboard in cargo lots. Gasoline for export remained as quoted last week, while gas and Diesel oils were up a trifle. Some fuel oil is said to have been disposed of slightly under the posted price.

The Pacific Coast gas war, which reached a devastating stage last week, continues with no sign of a let up, although many rumors are afloat that some agreement among the marketing companies may be made within the next few days. Other predictions are that the war will continue for several months.

Gasoline may be obtained at service stations in Los Angeles at prices ranging from 9 to 12½ cents, with very little being sold at the latter price. A number of service stations selling gasoline made by the major companies are offering such inducements as gasoline for 5 cents a gallon if the crank-case oil is changed. All stations are long on tire, windshield, and water service in an effort to attract the customer. The endeavor seems to be to sell as much of the profit making lube as possible so that the station may keep out of the red.

In the mad scramble for business several disputes between the service station owner and company officials have arisen as to the validity of contracts. In an attempt to hold a station to its contract, the Richfield Oil Company secured a preliminary injunction against an independent service station owner preventing him from dispensing other than Richfield products, except for certain specified lubricating oils. This injunction is expected to have considerable bearing on the present gasoline war in that it legally upholds lease contracts made between marketing companies and independent dispensers of petroleum products.

Tank car markets were down to a new low level of 5.50 to 6.50 cents, with plenty of gasoline available at 6 cents, and very little being sold. It is reported that some refiners are willing to sell at even a lower figure, although it is difficult to see how they can do it with any profit.

Natural gasoline made a corresponding drop to from 5 to 6 cents for spot sales. Even at these low figures there is not much call for it. Engine distillates were up a little to from 7.50 to 8.50 cents, with little demand at any price.

With an anticipated drop in crude oil, some of the independent companies are endeavoring to unload their stocks. As if to refute the possibility of a drop, they find little difficulty in selling.

It is thought that with the return to normal gasoline prices, the entire marketing situation on the Pacific Coast will have a better outlook.

Pennsylvania Market

Gasoline More Active

CLEVELAND, March 4.—Gasoline demand perked up a bit early this week in the western Pennsylvania refinery market. Some refiners reported an increase in the number of inquiries on hand this morning and in the number of sales.

Good weather prevailed over the week end in most districts, followed by rain Monday. One refiner, in the Oil City district, reported his company's service stations sold more gasoline over the week end than on any two days in either January or February.

Kerosene demand continued to be good last week. Some sellers dissented from the general report of good business, and reported this market was slow.

Cylinder and bright stocks demand was active. One seller dissented also on the cylinder stocks, reporting that 600 steam refined was not as active as it had been while 650 steam refined was in good demand. One seller reported there was good demand for his 600 Warren E stock.

Varied reports were given on conditions of the viscous neutral market. Some sellers reported neutrals were active as against other reports of a quiet market. One broker was offered sizable quantities of neutrals for resale late last week at a lower price than had prevailed.

Fuel oils continued to be scarce in most refining districts. Wax market was more settled than a week ago with seller's and buyer's ideas of price more in accord.

Quotations generally were unchanged over the week. U. S. Motor gasoline ranged from 9 to 9.50 cents. Majority of refiners were quoting 9.25 cents for U. S. Motor and many were quoting 9 cents. Higher gravity gasoline price ranges remained wide.

Several refiners today advanced quotations on 47 w.w. kerosene .25 cents to 8 cents flat. The 45 w.w. grade was generally quoted at 7.25 cents. Fuel oil, 36-40, advanced late last week when the 4.75 cents goods was off the market and quotations were 5 to 5.25 cents.

Neutral quotations generally were unchanged except for lower prices made on the quantity mentioned above. Light bright stock advanced today to a market of 39 to 40 cents. Wax quotations have gone up to 3.75 cents bottom on 122-124 and 3.875 cents on 124-126 white crude scale.

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Made to Stay in Gasoline

SEVERAL SHADES OF

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Write for price and sample of shade you prefer.

DYESTUFFS & CHEMICALS, INCORPORATED
11th & Monroe Sts. **St. Louis, Mo.**

New York Domestic Market

Improved Weather Helps Gasoline

Staff Special
NEW YORK, March 2

SPOT gasoline markets in eastern districts were a shade more active this week. Posted tank car prices in all sections except New York harbor remained unchanged but the number of companies "meeting conditions as they found them," a new phrase coined by the trade, was larger.

Under the stimulus of improved weather conditions and lower spot prices, jobbers were not as hesitant about taking a bit more than just their immediate requirements. However, no large volume of deferred shipment business was reported placed.

The one big snowfall the northeastern seaboard states have had this winter remained on the ground but a short time. Rising temperatures took it away after about three days. And as the vast majority of roads in the east are concrete, motoring was hampered but very little.

Despite the generally easier gasoline price situation, a large majority of active sellers were not pessimistic over the outlook for the future. Spring is just around the corner, they say, and constructive forces are at work to correct the basic evil confronting the industry, namely overproduction. They predict a reversal in the trend of the market in the next six weeks or two months.

The market in New York harbor opened Monday with the majority of sellers having reduced their quotations for U. S. Motor gasoline to 9.50 cents. Several sellers both of regular U. S. Motor and California gasoline reported spot orders the first two days of the week had increased materially as a result of the recession in the general market. The percentage increase was large in comparison to the volume of spot business that has been the rule since contracts became so advantageous to jobbers.

The 9.50-cent level, however, soon became one from which a number of sellers began shading with the result that the market was equally as unsettled Friday and Saturday as it was last week. Two or three sellers announced Wednesday they were willing to take on business at 9.25 cents; one said he had already sold 3 spot cars at 9 cents. Not until Friday, however, was goods freely available at the latter figure. One seller on this day stated he was offering any part of 1,000,000 gallons of U. S. Motor at 9 cents in barges or tank cars. The seller asserted the gasoline was strictly U. S. Motor specification material despite reports to the contrary.

The majority of sellers in the Philadelphia and Baltimore markets continued to quote 9.50 cents the first three days of the week for both U. S. Motor and California gasoline although a good many of them asserted they were meeting competition. Occasional cars of both grades were reported sold at 9.375 cents and lower. One seller at Baltimore reported receiving orders Monday for 10 cars at 9.50 cents for spot shipment, which, he said, was more spot business than he had received during one day than in any in the past six weeks. Competition was keener at Baltimore and Philadelphia Friday and Saturday and prices for California gasoline were reduced to 9.25 cents. Several sellers continued to quote higher for regular U. S. Motor.

Virtually no change was noted in New England markets. U. S. Motor in 3 car lots or more was offered at 10.50 cents, delivered, but sellers mostly were asking 0.25-cent more for less than this amount.

Demand for kerosene was reported slow in all districts but prices were unchanged. Most companies were asking 8.50 cents for water white goods; prime white was quoted at 8.25 cents in New York harbor.

The heavier burning oils also were unchanged both in price and demand.

Gulf Export Market

Cold Halts European Buying

Staff Special
NEW YORK, March 2

ACTIVITY continued at low ebb in Gulf markets the past week. Prices for all oils showed no material change over a week ago either for export or domestic shipment. There was some inquiry from east coast buyers for light oils but these failed to develop any actual sales.

European markets have been greatly depressed on account of the extreme cold and sickness, according to reports from the other side, which in turn accounts partly for the ability of foreign buyers to refrain from buying as long as they have. At least these were the opinions of several U. S. suppliers. Just when there would be a renewal of active buying from abroad, many of the trade were at a loss to say, although some were inclined to think any recession in prices of gasoline would change the situation materially.

At least two large domestic buyers were inquiring for cargoes of U. S. Motor gasoline the early part of this week. A firm offer of 8.25 cents c.i.f. New York was made by one supplier, but this failed to prove attractive to the buyers. The offer figures back approximately 7.75 cents f.o.b. the Gulf not including loss for evaporation, insurance, etc.

Demand for heavy oils also continued extremely light and prices in this section of the market were unchanged, except for grade C bunker oil for bunkering purposes which was reported available at $0.90 a barrel in the New Orleans district. In some quarters it was felt that this price also might be shaded 2.5 cents and possibly 5 cents per barrel.

Venezuelan Crude at $1.00

NEW YORK, March 2.—Demand for spot cargoes of Venezuelan crude oil has been a shade more active the past two or three weeks but prices have eased off in sympathy with market conditions in this country. Business has been placed recently on the basis of $0.75 per barrel f.o.b. deepwater in the Lake Maracaibo region.

Under current rates for dirty bottoms, oil can be laid down north of Hatteras at around $1.00 per barrel. Consensus of opinion among the trade this week was that the f.o.b. figure probably could be shaded at the present time. The tanker market, however, has been showing a slow but steady increase and it was generally felt the laid down price would figure approximately the same.

Lubes Steady in Gulf Coast

HOUSTON, March 4.—Gulf Coastal lubricant manufacturers report a steadier market. Sales have been made in no great volume but in most quarters demand is about normal.

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Superior Oil Works
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Wax Market

Wax More Active

NEW YORK, March 2.—Export wax markets were slightly more active the past week. Prices for white crude scale were easier but quotations remained practically the same, while fully refined grades, particularly the low melting points were down approximately 0.25-cent a pound.

Varied reports were heard from the trade in New York as to the status of the market. In some quarters it was stated the inquiry from the United Kingdom was considerably better. One inquiry for 500 tons of white crude scale was said to have been entered by a large buyer and the purchase of 200 tons at 3.50 cents against this order was reported. In other quarters the opinion was expressed that demand continued at a standstill but at the same time it was admitted prices were easier and there seemed to be little difficulty in doing 3.50 cents for sizable lots of scale as well as for small lots.

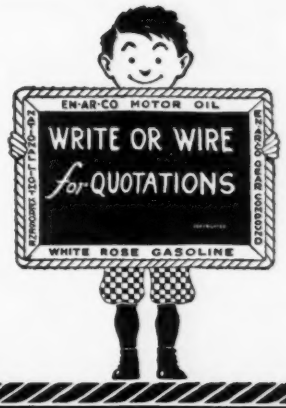
The inquiry for fully refined waxes was only slightly more active but more goods was offered in the open market than for some time past. Fully refined, both 123-125 and 125-127 A.m.p., was quoted at 5.25 cents, New York toward the end of the week. The position of sellers of the higher melting point grades continued more or less nominal and quotations were substantially the same as a week ago.

The New Orleans market was fairly active this week and prices were steadier than at New York. Chilean buyers have taken considerable quantities of scale and demand from the rest of the west coast of South America has been particularly good, according to the reports of one seller in the New Orleans market.

White crude scale was quoted at 3.75 to 4 cents at New Orleans, about 0.25-cent over New York but 125-127 A.m.p. fully refined was offered at 5.25 cents, the same as at New York.

Sanborn Remains Head of Oil Club

MINNEAPOLIS, March 2.—At the annual meeting of the Twin City Petroleum Club held at the Nicollet hotel Feb. 22, Perry C. Sanborn, of the John Hancock Oil Co., Minneapolis, was re-elected president; and John C. Jennison, Minnesota Shell Corp., St. Paul, vice president, according to Paul E. Hadlick, secretary of the Minnesota Petroleum Association. New directors were: A. P. McGrath, manager Skelly Oil Co., St. Paul; J. A. DeLaittre, DeLaittre Dixon Co., Minneapolis; and Charles Mair, Phillips Petroleum Co., Minneapolis.



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White Rose GASOLINE

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All grades of lubricating oils and greases.

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PDM RED-HEAD tanks are designed and built to safely store inflammable liquids of any type. Highly combustible oils are confined with surety, as all seams are welded or riveted-and-welded, tested and guaranteed tight at a pressure of five pounds per square inch. They meet all the requirements of the Underwriters' Laboratories and can be furnished with Underwriters' Labels if desired.

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Complete Seaboard Market

(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of quotations.)

	Mar. 4	Feb. 25	Feb. 18
U. S. MOTOR GASOLINE			
New York harbor	9.00 – 9.50	9.50	9.75 –10.00
Portland district	**11.00–11.25	**11.00–11.25	*11.50
Boston district	**10.50–10.75	**10.50–10.75	*11.00
Providence district	**10.50–10.75	**10.50–10.75	*11.00
Philadelphia district	9.25 – 9.50	9.50	9.75 –10.00
Baltimore district	9.25 – 9.50	9.50	9.75 –10.00
Norfolk district		9.50	10.00
Charleston district		9.50	10.00
Savannah district	9.00 – 9.50	9.00 – 9.50	9.75 –10.00
Jacksonville district		9.50	10.00
CALIFORNIA U. S. MOTOR GASOLINE			
New York harbor		9.50	10.00
Philadelphia district		9.25	9.75
Baltimore district	9.25 – 9.50	9.50	9.75 –10.00
WATER WHITE KEROSENE			
New York harbor		8.50	8.50
Philadelphia district		8.50	8.50
Baltimore district		8.50	8.50
GAS OIL: 28-34 Gravity			
New York harbor	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
Boston district	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00
FURNACE OIL: 36-40 Gravity			
New York harbor		6.50	6.50
Boston district	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
GRADE C BUNKER OIL			
New York harbor		$1.05	$1.05
Boston district		$1.05	$1.05
DIESEL OIL			
New York harbor		$2.00	$2.00
MEDICINAL OILS, RUSSIAN			
885-890 s.g., 325-330 vis.	$0.80 – 0.90	$0.80 – 0.90	$0.80 – 0.90
870-875 s.g., 150-155 vis.	$0.67 – 0.77	$0.67 – 0.77	$0.67 – 0.77
860-865 s.g., 80-85 vis.	$0.65 – 0.75	$0.65 – 0.75	$0.65 – 0.75

Note: Above gasoline prices do not include inspection tax levied in some states.
*Minimum delivered. **Delivered prices.

New York Export Market

(Lubricating oils are per gal. in bbls.)

	Mar. 4	Feb. 25	Feb. 18
CYLINDER OILS (Pennsylvania Products)			
Bright stock, dark	44.00 –47.00	43.00 –47.00	44.00 –48.00
600 D filtered	36.50 –37.00	36.50 –37.00	37.00
600 Warren E filtered	32.00 –33.00	32.00 –33.00	32.00 –33.00
600 s.r. unfiltered	28.50 –32.00	29.00 –32.00	28.50 –32.00
650 s.r. unfiltered	35.50 –37.00	35.00 –37.00	35.50 –38.00
600 flash, s.r.	38.00 –40.00	36.50 –40.00	37.00 –40.00
630 flash, s.r.	44.00 –46.00	44.00	44.00 –46.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	20.00	20.00	20.00
250 vis. No. 6 color	19.50	19.50	19.50
200 vis. No. 6 color	18.00	18.00	18.00
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¼ color	23.50	23.50	23.50
180 vis. No. 3¼ color	19.00	19.00	19.00
100 vis. No. 2¼ color	16.00	16.00	16.00
MOTOR OILS (Vis. 100°)			
600 vis No. 7 color	33.00	33.00	33.00
500 vis. No. 6½ color	31.00	31.00	31.00
400 vis. No. 7¼ color	30.00	30.00	30.00
300 vis. No. 6 color	29.00	29.00	29.00
200 vis. No. 6 color	28.00	28.00	28.00
MEDICINAL OILS			
875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70
WAXES (In cents per pound, f.a.s. carload lots)			
WHITE CRUDE SCALE (In barrels)			
122-124 A.m.p.	3.50 – 3.75	3.50 – 3.75	3.50 – 3.75
124-126 A.m.p.	3.50 – 3.75	3.50 – 3.75	3.50 – 3.75
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	5.25 – 5.50	5.50 – 5.625	5.50 – 5.625
125-127 A.m.p.	5.25 – 5.50	5.50 – 5.75	5.625– 5.75
128-130 A.m.p.	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
130-132 A.m.p.	6.50	6.50	6.50
133-135 A.m.p.	7.25	7.25	7.25
135-137 A.m.p.	7.75	7.75	7.75
YELLOW CRUDE SCALE			
124-126 A.m.p.	3.50	3.50	3.50

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. or more unless otherwise noted and for export shipment only).

	Mar. 4	Feb. 25	Feb. 18
GASOLINE			
U. S. Motor	8.50	8.50	8.50
60-62 400 e.p.	9.50	9.50	9.50
61-63, 390 e.p.	9.75	9.75	9.75
64-66, 375 e.p.	10.00	10.00	10.00
U. S. Motor, cases (cargoes)	$1.75	$1.75	$1.75
64-66, cases (cargoes)	$1.90	$1.90	$1.90
KEROSENE			
44 water white	7.75	7.75	7.75
41-43 prime white	6.75	6.75	6.75
Water white, cases (cargoes)	$1.70	$1.70	$1.7
Prime white, cases (cargoes)	$1.60	$1.60	$1.600
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	3.75 – 3.875	3.75 – 3.875	3.75 – 3.875
*32 plus translucent gas oil	3.875	3.875	3.875
Grade C bunker oil	$0.90 –$0.95	$0.95	$0.95
Grade C bunker oil, cargoes	$0.70 –$0.75	$0.70 –$0.75	$0.70 –$0.75
*Less than ½ of 1% sulfur.			
MEXICAN CRUDE AND BUNKER OILS (F. O. B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$0.75	$0.75	$0.75
Grade C bunker oil, for bunkering purposes, taxes paid	$0.90	$0.90	$0.90
SOUTH TEXAS LUBRICATING OILS (Viscosity at 100° F.: cold test 0) (Tanker, f.o.b. Houston)			
100 vis. No. 2 unfiltered pale	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50
200 vis. No. 3 unfiltered pale	8.50 – 9.50	8.50 – 9.50	9.00 – 9.50
300 vis. No. 3 unfiltered pale	9.75 –10.50	9.75 –10.50	10.00 –10.50
500 vis. No. 3½ unfiltered pale	11.00 –12.00	11.00 –12.00	11.50 –12.00
750 vis. No. 4 unfiltered pale	13.00 –13.25	13.00 –13.25	13.00 –13.25
1200 vis. No. 5 unfiltered pale	16.00 –17.00	16.00 –17.00	16.00 –17.00
200 vis. No. 5-6 red oil	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300 vis. No. 5-6 red oil	9.00 – 9.25	9.00 – 9.25	9.00 – 9.25
500 vis. No. 5-6 red oil	10.00 –10.50	10.00 –10.50	10.00 –10.50
750 vis. No. 5-6 red oil	11.50 –12.00	11.50 –12.00	11.50 –12.00
1200 vis. No. 5-6 red oil	15.00 –16.50	15.00 –16.50	15.00 –16.50

Gulf Domestic Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana in shipments of 20,000 bbls. or more, representing sellers' opinions, for domestic shipment only).

	Mar. 4	Feb. 25	Feb. 18
U. S Motor gasoline	7.75	7.75 – 8.00	8.00
41-43 w.w. kerosene	6.875– 7.00	6.875– 7.00	7.00
*28-32 translucent gas oil	3.875	3.875	3.875
*Less than ½ of 1% sulfur.			

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Mar. 4	Feb. 25	Feb. 18
Gasoline, U. S. Motor, 53-55 Gravity	7.25 – 7.75	7.25 – 7.75	7.375– 8.00
Gasoline, U. S. Motor, blends and special cuts	7.50 –10.00	7.75 –10.00	8.25 –10.00
Gas Oil, 30-34, per barrel	$0.90 –$1.05	$0.90 –$1.00	$0.90 –$1.00
Diesel Oil, 27 plus, per barrel	$0.875–$1.00	$0.90 –$1.05	$0.90 –$1.05
Bunker oil, 14-18, per barrel	$0.70 –$0.85	$0.70 –$0.85	$0.70 –$0.85
Fuel oil, 14-18 per barrel	$0.65 –$0.85	$0.65 –$0.85	$0.65 –$0.85
Kerosene, 38-40 w.w., 125-150 flash, per gal.	5.50 – 6.25	5.50 – 6.25	5.50 – 6.25
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Kerosene, 38-40 w.w., 125-150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	Mar. 4	
	Crude & / or Fuel	Refined Oil & /or Spirits
Calif. to U. K. or Continental ports*	25–27	27
Gulf to U. K. or Continental ports*	16–17	16–17
North Atlantic to U. K. or Continental ports*	14–15	14–15
Calif. to North Atlantic ports (not E. of N. Y.)	65–70	67–70
Gulf to North Atlantic ports (not E. of N. Y.)**	26–28	25–27

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.
**For Venezuela loading 1c per bbl. additional. For Tampico loading 4c per bbl. additional.

NORTHERN ROTARY PUMPS

"MORE GALLONS PER HORSE POWER"

In The Oil Industry

Northern Loading or Transfer Pumps are right for all Petroleum Products from Gasoline to Heaviest Crude. Northern Pumps draw Lube from 28″ Vac. Stills—put Mineral Seal Oil into 400-lb. Pressure Stills—pump Casing Head gasoline against 400 lbs. line pressure—recover Pipe Line Leakage—are useful throughout the entire oil industry.

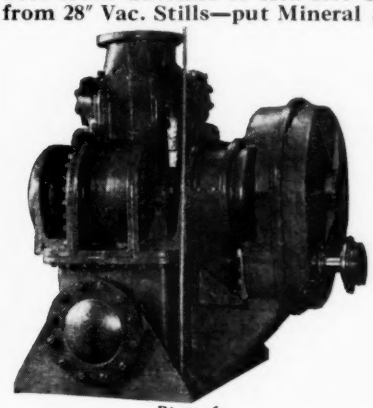


Plate 1.

The Northern Foam Pumping unit pictured in Plate 2 is typical of dozens of similar Northern Units, protecting many Refineries and Farms.

The six foot high Northern Pump shown in Plate 1 loads California Crudes into Tankers at the rate of 5,000 barrels per Hour. The Herringbone Reduction Gear built into this pump steps the driver speed from 960 R.P.M. down to the Pump Speed of 175 R.P.M. quietly.

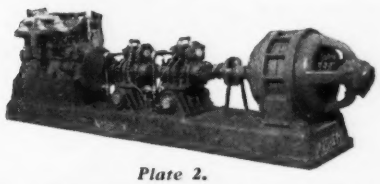


Plate 2.

NORTHERN PUMP CO.

MINNEAPOLIS, MINN.

OFFICES IN ALL PRINCIPAL CITIES

FARM PUMPS

All is furnished as shown in cut

Built right—
Priced right—

Saving of $7.00 to $11.00 on installation cost.

Get lined up on "Farm Pumps". Be a step ahead when the Season opens. Write today!

MARS CO.

Aurora, Ill.

Peace-maker

Announcement

EFFECTIVE immediately the name of Root Refineries, Inc. is changed to Root Refining Company. The same policies as existed in the past will be used under the new name.

ROOT REFINING COMPANY

Shreveport, Louisiana

Refineries at
El Dorado, Ark

Sales Office
Commercial National Bank Bldg.,
Shreveport, Louisiana

Tank Wagon, Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t. w. and s. s. markets for the whole year, arranged for quick reference)

These Prices in Effect March 4, 1929, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Atlantic City, N. J.	14	2	16	20	13
Newark, N. J.	14	2	16	20	13
Annapolis, Md.	14	4	18	22	13
Baltimore, Md.	14	4	18	22	13
Cumberland, Md.	14	4	18	22	13
Washington, D. C.	14	2	16	20	13
Danville, Va.	14	5	19	23	13
Norfolk, Va.	14	5	19	23	13
Richmond, Va.	14	5	19	23	13
Roanoke, Va.	14	5	19	23	13
Petersburg, Va.	14	5	19	23	13
Charleston, W. Va.	14	4	18	22	13
Keyser, W. Va.	14	4	18	22	13
Parkersburg, W. Va.	14	4	18	22	13
Wheeling, W. Va.	14	4	18	22	13
Charlotte, N. C.	14	4	18	22	13
Hickory, N. C.	14	4	18	22	13
Mt. Airy, N. C.	14	4	18	22	13
Salisbury, N. C.	14	4	18	22	13
Charleston, S. C.	14	5	19	23	13
Columbia, S. C.	14	5	19	23	13

CONTINENTAL OIL

Denver, Colo.	11	3	14	16	14.5
Pueblo, Colo.	14	3	17	20	14.5
Grand Junc., Colo.	18.5	3	21.5	24.5	18
Casper, Wyo.	15	3	18	21	13
Cheyenne, Wyo.	16	3	19	22	14.5
Butte, Mont.	19.5	3	22.5	25.5	19
Helena, Mont.	19.5	3	22.5	25.5	19
Salt Lake City, Utah	17.5	3½	21	24	17
Boise, Ida.	17.5	4	21.5	24.5	19
Twin Falls, Ida.	19.5	4	23.5	26.5	19
Albuquerque, N. M.	17	5	22	25	17

S. O. CALIFORNIA

Phoenix, Ariz.	12	4	16	20	21.5
Los Angeles, Cal.	9.5	3	12.5	16.5	15.5
Fresno, Cal.	10	3	13	17	16.5
San Francisco, Cal.	10	3	13	17	15.5
Reno, Nev.	14	4	18	22	19
Portland, Ore.	10.5	3	13.5	17.5	16.5
Seattle, Wash.	10.5	2	12.5	16.5	16.5
Spokane, Wash.	14.5	2	16.5	20.5	20.5
Tacoma, Wash.	10.5	2	12.5	16.5	16.5

S. O. LOUISIANA

Little Rock, Ark.	13	5	18	21	13
Alexandria, La.	12	4	16	19	†16
Baton Rouge, La.	11	4	15	18	†14.5
Lake Charles, La.	12.5	4	16.5	19.5	†16
New Orleans, La.	*12.5	4	*16.5	*19.5	†16
Shreveport, La.	12	4	16	19	†15
Lafayette, La.	12	4	16	19	†14
Bristol, Tenn.	15	5	20	24	14
Chattanooga, Tenn.	14.5	5	19.5	23.5	16
Knoxville, Tenn.	15	5	20	24	16
Nashville, Tenn.	14	5	19	23	16
Memphis, Tenn.	13	5	18	22	12.5

*New Orleans gasoline prices include 1c parish tax in addition to 4c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

S. O. KENTUCKY

Ashland, Ky.	16	5	21	23	15.5
Catlettsburg, Ky.	16	5	21	23	15.5
Lexington, Ky.	15	5	20	22	15.5
Louisville, Ky.	15	5	20	22	15
Covington, Ky.	15	5	20	21	15.5
Clarksdale, Miss.	16	5	21	23	13
Gulfport, Miss.††	17.5	5	22.5	24.5	14
Jackson, Miss.	15	5	20	22	13
Natchez, Miss.	15.5	5	20.5	22.5	14
Vicksburg, Miss.	15.5	5	20.5	22.5	14
Birmingham, Ala.	14	4	18	20	13
Mobile, Ala‡	17	4	21	23	15
Montgomery, Ala*	18	4	22	24	16.5
Atlanta, Ga.	17	4	21	23	†16.5
Augusta, Ga.	17	4	21	23	†15.5
Macon, Ga.	17	4	21	22	†16.5
Savannah, Ga.	16	4	20	22	†15.5
Jacksonville, Fla.	17	5	22	24	14.5
Miami, Fla.	18	5	23	25	15.5
Tampa, Fla.	17	5	22	24	14.5
Pensacola, Fla**	18	5	23	25	14.5

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. ‡Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

Latest Changes In Tank Wagon Prices

(By Telegraph)

Gasoline Changes

S. O. New York—T.w. and s.s. prices gasoline cut 1c, Albany, to 14c and 15c respectively, **March 2.**

Correction: S. O. New York, in rechecking its prices at Syracuse, advised NATIONAL PETROLEUM NEWS that the 14c t.w. price published at that point in the Feb. 27 issue, page 124, was given to this publication in error. T.w. price at Syracuse remains 15c, and s.s. 16c. Prices in this issue have been corrected.

Continental Oil—T.w. and s.s prices gasoline cut 2c, Denver, to 14c and 16c, including 3c tax, **March 1.**

S. O. NEBRASKA

Omaha, Neb.	14.25	2	16.25	18.25	12.25
McCook	15.75	2	17.75	19.75	13.75
Nortolk	14.75	2	16.75	18.75	12.75
North Platte	15.75	2	17.75	19.75	13.50
Scottsbluff	15.75	2	17.75	19.75	13.25

S. O. INDIANA

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Chicago, Ill.	14	0	14	15	12
Decatur, Ill.	14.2	0	14.2	15.2	12.1
E. St. Louis, Ill.	13.4	0	13.4	14.4	11.2
Joliet, Ill.	14.4	0	14.4	15.4	12.3
Peoria, Ill.	14.2	0	14.2	14	12.1
Quincy, Ill.	14.2	0	14.2	15.2	11.9
Indianapolis, Ind.	14.2	3	17.2	18.2	13.2
Evansville, Ind.	14	3	17	18	13
South Bend, Ind.	14.4	3	17.4	18.4	13.4
Detroit, Mich.	14.8	3	17.8	18.8	13.7
Grand Rapids, Mich.	14.7	3	17.7	18.7	13.6
Saginaw, Mich.	14.9	3	17.9	18.9	13.8
Green Bay, Wis.	14.6	2	16.6	17.6	12.4
Madison, Wis.	14.3	2	16.3	17.3	12.1
Milwaukee, Wis.	14.1	2	16.1	17.1	11.9
La Crosse, Wis.	15.2	2	17.2	18.2	13
Minneapolis, Minn.	15.2	2	17.2	18.2	12.9
Duluth, Minn.	15.5	2	17.5	18.5	12.9
Mankato, Minn.	15.1	2	17.1	18.1	12.7
Des Moines, Ia.	14.5	3	17.5	18.5	12.3
Davenport, Ia.	14.5	3	17.5	18.5	12.3
Sioux City, Ia.	14.1	3	17.1	18.1	11.9
Mason City, Ia.	14.5	3	17.5	18.5	12.3
St. Louis, Mo.	*13.9	2	15.9	16.9	11.3
Kansas City, Mo.	†14.9	2	16.9	17.9	10.6
St. Joseph, Mo.	†14.5	2	16.5	17.5	11.2
Fargo, N. D.	16.9	2	18.9	19.9	14.9
Grand Forks, N. D.	17.2	2	19.2	20.2	15.2
Minot, N. D.	16.9	2	18.9	19.9	14.9
Pierre, S. D.	15	4	19	20	13.4
Huron, S. D.	15.3	4	19.3	20.3	13.7
Wichita, Kans.	12.8	2	14.8	15.8	10.8
Bartlesville, Okla.	12.5	3	15.5	16.5	10.5

S. O. Indiana's quantity contract price schedule thru territory except Chicago on tank truck deliveries of gasoline, figured from the service station price, is 2c for 500 gals. or more a month; 2½c for 2000 gals. or more a month and 3c for 6000 gals. or more a month.

In Chicago and vicinity, these discounts apply: Over 500 gals. per month, 2c per gal. off service station price; over 1,000 gals per month, 4c per gal. off service station price.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. OHIO

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Summit & Fayette counties	**13	3	**16	16	12
†At Other Competitive Points	*13	3	*16	17	12
Elsewhere in Ohio	*14	3	*17	18	12

†These points are: all of Columbiana county, including East Liverpool, Wellsville, Salem, Columbiana and Lisbon; all of Mahoning county, including Youngstown, Lowellville and Struthers; all of Franklin county, including Columbus, Westerville, Worthington and Rome; all of Scioto county, including Portsmouth, and Ross county, including Chillicothe; Fairfield county, including Lancaster; Jefferson county, including Steubenville: and these additional points: Niles, Warren, Canton, Marion, Lima, Perrysburg, Bryan, Hicksville, Hamilton, Mansfield, Kent, Middletown, Fostoria, Findlay, Piqua, Cortland, Hubbard, Girard and Piketon.

*Dealers and commercial accounts get 2c per gal. off t.w. price. Discounts off service station price eliminated Jan. 29, on which date 2c discount to governmental agencies and public utilities was also discontinued, except on uncancelable contracts.

**Dealer and commercial consumers' discount in Summit and Fayette counties, including Akron and Washington C. H., is 3c per gal. off tank wagon price.

MAGNOLIA PETROLEUM

Muskogee, Okla.	**11	3	14	15	12
Oklahoma City	**13	3	16	18	12
Tulsa, Okla.	**14	3	17	19	10
Fort Smith, Ark.†	13	†3	16	19	13
Little Rock, Ark.	13	5	18	21	13
Texarkana, Ark.*	14	*2	16	19	13
Dallas, Tex.	14	2	16	20	12
Fort Worth, Tex.	11	2	13	16	12
Houston, Tex.	14	2	16	20	13
San Antonio, Tex.	11	2	13	17	11
El Paso, Tex.	15	2	17	20	16

*Within city of Texarkana, the state tax on gasoline is 2c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 3c applies. In this district outside of the city, the 5c Arkansas tax applies.

**Less 2c to dealers.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

New York City	17	0	17	*19	15
Albany, N. Y.	14	0	14	15	15
Buffalo, N. Y.	14	0	14	15	14
Rochester, N. Y.	14	0	14	15	13
Syracuse, N. Y.	15	0	15	16	13
Boston, Mass.	16	2	18	20	15
Augusta, Me.	16	4	20	22	15
Manchester, N. H.	16	4	20	22	15
Burlington, Vt.	15	3	18	20	15

Note: S O. New York allows concessions of 1 to 2c per gal. to dealers under posted tank wagon prices

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator in New York, selling Socony gasoline.

ATLANTIC REFINING

Pittsburgh, Pa.	†15	*	†15	20	14
Philadelphia, Pa.	†15	*	†15	20	14
Allentown, Pa.	†15	*	†15	20	14
Erie, Pa	†15	*	†15	20	14
Scranton, Pa.	†15	*	†15	20	14
Altoona, Pa.	†15	*	†15	20	14
Dover, Del.	†15	3	†18	20	14

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both; Colorado, 1/10c on both; Florida, 1/8c on both; Indiana, 2/25c on both; Kansas, 1/50c on both; Louisiana, 1/32c on gasoline, 1c on kerosene; Minnesota, 3/50c on both; Missouri, 1/50c on both; Nebraska, 3/50c to 1/2c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma. 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c on kerosene; Wisconsin. 3/50c on both.

Kerosene inspection fees only: Iowa, 13/100c; Michigan. 1/5c to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above states or other states there are local inspection fees.

Tank Wagon, Service Station Markets for Gasoline and Kerosene

Prices in Effect March 4, 1929

ATLANTIC REFINING, Cont'd

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Wilmington, Del.	†15	3	†18	20	14
Boston, Mass.	16	2	18	20	15
Springfield, Mass.	16	2	18	20	15
Worcester, Mass.	16	2	18	20	15
Fall River, Mass.	16	2	18	18	15
Providence, R. I.	16	2	18	20	15
Hartford, Conn.	16	2	18	20	14
New Haven, Conn.	16	2	18	20	15
Atlantic City, N. J.	16	2	18	20	13
Camden, N. J.	16	2	18	20	13
Trenton, N. J.	16	2	18	20	13
Annapolis, Md.	16	4	20	22	13
Baltimore, Md.	16	4	20	22	13
Hagerstown, Md.	16	4	20	22	13
Richmond, Va.	16	5	21	23	13
Wilmington, N. C.	16	4	20	22	13
Brunswick, Ga.	17	4	21	23	**15.5
Jacksonville, Fla.	17	5	22	24	14 5

*3-cent state tax is collected by retail dealer and paid by him directly to state.

†The Atlantic Refg. Co. recognizes a 2c a gal. discount from its posted tank wagon market on sales to dealers for purposes of resale.

The company also recognizes a maximum discount of 2c per gallon to commercial accounts under contract for one year.

**Georgia kerosene prices include 1c state tax.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.2	18
Detroit	16.4	17.9	19.7
Kansas City	†14.9	†16.4	†18.2
Milwaukee	15.4	*18.9	*20.7
Minneapolis	*18.7	*20.2	*22
St. Louis	14.6	16.1	17.9
New York		18	21
Boston		18	21

*Includes 2c state tax. †Includes 1c city tax.

PETROLEUM SPIRITS

Tank Cars (Solvent)

New York refineries	11.50–12
New England refineries	11.50–12
Philadelphia refineries	11.50–12

Tank Wagons or Steel Barrels

New York City	17–18
New England	19
New Jersey	19
Pennsylvania	18

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
ONTARIO					
Toronto	19.5	3	22.5	26	21
Ottawa	19.5	3	22.5	26	21
Cochrane	24.5	3	27.5	..	26
Ft. William	22.5	3	25.5	29	22.5
MANITOBA					
Winnipeg	21.5	3	24.5	28	21.5
SASKATCHEWAN					
Regina	26	3	29	33	26
ALBERTA					
Edmonton	27.5	3	30.5	34	27.5
Calgary	23.5	3	26.5	30	23.5
BRITISH COLUMBIA					
Vancouver	20	3	23	27	23
QUEBEC					
Montreal	20.5	5	25.5	29	22
Quebec City	21.5	5	26.5	30	23
Three Rivers	21.5	5	26.5	30	23
NEW BRUNSWICK					
St. John	24	5	29	33	25
Moncton	24	5	29	33	25
NOVA SCOTIA					
Halifax	24	5	29	33	25
Sydney	24	5	29	33	25
PRINCE EDWARD ISLAND					
Charlottetown	24	5	29	33	25

Note: In districts surrounding these points 1c additional is added to city price.

Skilled Supervision
Guarantees the Quality of Gulf Products

COASTAL AND PARAFFINE CRUDES
GASOLINE — LUBRICATING OILS
NAPHTHA — GAS — OILS
WAX — PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

Gulf Refining Company

General Sales Offices
PITTSBURGH, PA.

District Sales Offices
New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans

STEEL
DRUM ACCESSORIES
CORPORATION
BUFFALO, NEW YORK
"The House of Drum Faucets"

INDUSTRIAL OIL CORPORATION

To JOBBERS who BLEND THEIR OWN MOTOR OILS

Our location in the heart of the Pennsylvania oil fields enables us to furnish you the finest grades of

Pure Pennsylvania Bright Stocks and Neutrals

We can quote you the lowest possible price in any quantity from a single drum to a tank car and give you the quickest possible delivery.

We are as close as the Phone at your elbow and waiting to serve you.

WARREN PENNSYLVANIA U·S·A

ANY DESIRED CAPACITY

Dayton Air Compressors Built in 1 to 52 C. F. Capacities

WE are ready to outfit any Super Station with all the air needed for their various uses, at less first cost and less operating cost than the same capacity can be purchased in other makes.

That's because we build *only* compressors—specialize in them.

The smallest roadside station gets just as close attention and thought as the larger plant in the matter of advice.

We have made it a part of our policy to sell the buyer the unit best adapted to his needs—never a larger or smaller one than represents true economy to him.

Here's a Highly Popular Type

TWO-STAGE DAYTON "G"

Made in 7 sizes. The only two-stage air compressor in the world built

WITHOUT

Connecting Rods —

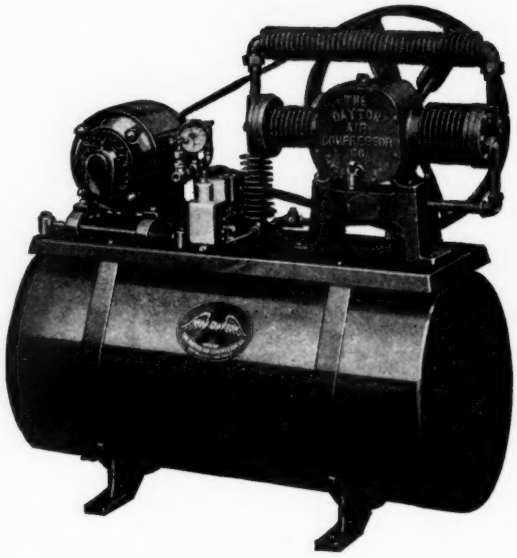
Crosshead Pins —

Cotter Pins —

Bolts —

or other trouble making parts.

Get a Bulletin



DAYTON AIR COMPRESSORS

425 Valley St. **Dayton, Ohio**

Gott Water Cans & Coolers
Gott
Have a cool supply of clean-pure sparkling water... ready to drink at all times. No matter where you are the GOTT Water Can is health insurance.
Your supply store has them
Gotkool
GOTT Water Cans 1½ gal; 3 gal; 5 gal; and 10 gal.
GOTT Water Coolers 3 gal; 5 gal; 8 gal; 10 gal; and 20 gal.
H. P. GOTT MFG. CO. · Winfield, Kansas
KEEP PURE DRINKING WATER ALWAYS HANDY

Crude Oil Prices (in Effect March 4, 1929)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Allegheny, N. Y. District)	$4.10
Bradford District Oil in National Transit Lines (Bradford District)	4.10
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	4.00
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	4.00
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	3.90
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	3.85
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.45
Corning Grade in Buckeye Pipe Lines (Ohio)	1.75
Corning, O., heavy grade	1.65
Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.60
Ragland Grade in Cumberland Pipe Lines (Kentucky)	$0.60

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines	$1.60

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective Jan. 25, 1929

Wooster(Oct. 17)*	$1.62	Priceton	$1.45
Lima	1.50	Illinois	1.45
Waterloo	1.20	Plymouth	1.18
Indiana	1.27	West Kentucky	1.53

*Wooster crude run prior to Oct. 17, 1928 takes price of $1.52.

Pure Oil Co.

Midland, Midland County, Michigan	$1.64

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Petrolia	$1.90
Oil Springs	1.97

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective Jan. 25, 1929

Below 25	$0.60	35-35.9	$1.17
25-25.9	0.66	36-36.9	1.20
26-26.9	0.72	37-37.9	1.23
27-27.9	0.78	38-38.9	1.26
28-28.9	0.84	39-39.9	1.29
29-29.9	0.90	40-40.9	1.32
30-30.9	0.96	41-41.9	1.35
31-31.9	1.02	42-42.9	1.38
32-32.9	1.08	43-43.9	1.41
33-33.9	1.11	44 and above	1.44
34-34.9	1.14		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

Jan. 24, 1929, same schedule as Prairie in above fields.

Mirando, Tex	$0.80
Salt Flat, Tex	0.80

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

Jan. 25, 1929, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades:

Below 26	$0.60	29-29.9	$0.80
26-26.9	0.65	30-30.9	0.90
27-27.9	0.70	31-31.9	1.00
28-28.9	0.75		

Glasscock, Crane, Upton, Winkler Counties	0.65
Chalk field (Howard Co.)	0.65
Iatan district	0.93
Corsicana heavy	0.80
Luling	0.80

Carter Oil Co.

(Oklahoma and Kansas)

Jan. 24, 1929, same schedule as Prairie except Carter does not post oil below 25.

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective Jan. 24, 1929

Hutchinson and Carson Counties:

Below 32	$0.72	38-38.9	$0.96
32-32.9	0.78	39-39.9	0.99
33-33.9	0.81	40-40.9	1.02
34-34.9	0.84	41-41.9	1.05
35-35.9	0.87	42-42.9	1.08
36-36.9	0.90	43-43.9	1.11
37-37.9	0.93	44 and above	1.14

Wheeler County:

Below 30	$0.70	37-37.9	$1.03
30-30.9	0.76	38-38.9	1.06
31-31.9	0.82	39-39.9	1.09
32-32.9	0.88	40-40.9	1.12
33-33.9	0.91	41-41.9	1.15
34-34.9	0.94	42-42.9	1.18
35-35.9	0.97	43-43.9	1.21
36-36.9	1.00	44 and above	1.24

Gray County:

Below 29	$0.69	37-37.9	$1.08
29-29.9	0.75	38-38.9	1.11
30-30.9	0.81	39-39.9	1.14
31-31.9	0.87	40-40.9	1.17
32-32.9	0.93	41-41.9	1.20
33-33.9	0.96	42-42.9	1.23
34-34.9	0.99	43-43.9	1.26
35-35.9	1.02	44 and above	1.29
36-36.9	1.05		

WEST TEXAS

Humble Oil & Refining Co.

Effective July 26, 1928

Winkler, Crane, Upton, Crockett, Howard and Pecos Counties	$0.65

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto and **Cotton Valley.

Effective Jan. 26, 1929

Below 28	$0.78	36-36.9	$1.20
28-28.9	0.84	37-37.9	1.23
29-29.9	0.90	38-38.9	1.26
30-30.9	0.96	39-39.9	1.29
31-31.9	1.02	40-40.9	1.32
32-32.9	1.08	41-41.9	1.35
33-33.9	1.11	42-42.9	1.38
34-34.9	1.14	43-43.9	1.41
35-35.9	1.17	44 and above	1.44

**Cotton Valley, below 36, $0.75. Beginning with 36-36.9, same schedule as above.

Smackover, below 24	$0.75
do 24 and above	0.90
Bellevue	1.20
*Urania, La	0.90
†East El Dorado	0.75

*Posted by Louisiana Oil Refining Corp.
†Posted by Magnolia Petroleum Co.

Jan. 25, The Texas Co. same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.60; 25-25.9, $0.66; 26-26.9, $0.72; 27-27.9, $0.78.

Jan. 26, Magnolia Petroleum met Standard schedule in Louisiana-Arkansas fields.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective Jan. 28, 1929

Below 28	$0.70	30-30.9	$0.82
28-28.9	0.74	31-31.9	0.86
29-29.9	0.78	32 and above	0.90

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective Jan. 26, 1929

Grades A	$1.20	29-29.9	$1.15
Grades B:		30-30.9	1.17
Below 25	1.05	31-31.9	1.19
25-25.9	1.07	32-32.9	1.21
26-26.9	1.09	33-33.9	1.23
27-27.9	1.11	34-34.9	1.25
28-28.9	1.13	35 and above	1.27

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Pierce Junction, Sugarland and Raccoon Bend. All other fields are Grades A only

Soft Coal Producers Ask Oil Duty

WASHINGTON, March 1.—A tariff duty on crude petroleum coming from foreign lands into the United States, for the protection of the soft coal industry was the startling proposal, almost a demand, that was placed before the House committee on ways and means on Washington's birthday. It was laid before that body by Harry L. Gandy, executive secretary of the National Coal Association, himself a member of the committee a few years ago.

The next day Representative E. B. Howard, of Oklahoma, who is regarded as the particular advocate of the relatively small, sometimes called, independent producer, asked for a duty for the protection of the American producer of petroleum.

Gandy said his desire was to preserve the Atlantic seaboard market for the soft coal industry, insofar as that was possible, by limiting the competition with soft coal to petroleum produced in the United States by putting a duty on foreign crude great enough to have an effect on the price. Competition of American oil, he said, was what was expected. The coal industry, Gandy said, would bear that with whatever equanimity it could summon. But he drew the line at foreign fuel oil, which, he said, was the overwhelming component of Caribbean and South American oils.

Howard appeared in behalf of his bill imposing a duty of $1 a barrel. He got no help from any quarter other than the soft coal industry. Before preparing the statement which he made to the committee he received expressions of interest and support from mid-Continent producers but none wanted to appear before the committee.

Correction

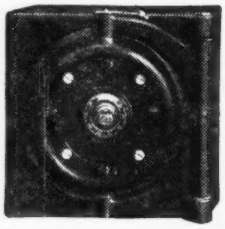
A news item on page 107 of the January 9 issue of NATIONAL PETROLEUM NEWS concerning the explosion-proof self-ventilated motor of the Louis Allis Co., Milwaukee, Wis., gave the impression that this motor was for applications involving hazard, rather than saying that it was suitable for the most hazardous applications.

The company claims that this explosion-proof motor, which is fully enclosed and self-ventilated, is designed for use wherever gasoline, or liquids of equal hazard, are made, used or handled. When direct connected to machines in explosive atmospheres, thus eliminating belts, this motor eliminates the hazard of fire from sparks due to belt static. The motor has been tested and listed by the Underwriters' Laboratories.

Is this burglar spending your money?

He has made another successful raid upon a filling station. The money he is spending upon Wine, Women and Automobiles belongs to the owner of a station in a town a hundred miles away. Will he be spending your money next week? Not if you install a York Burglary Chest,

YORK SAFE *and* LOCK COMPANY
York, Pa.



PETROLEUM PRODUCTS
From All Fields

Carloads, Tank Cars, and Cargoes.
For Domestic or Export.

GASOLINE KEROSENE NAPHTHA
CRUDE OIL FUEL OIL GAS OIL FURNACE OIL
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UNFILTERED AND FILTERED
BRIGHT STOCKS
COLD SETTLED AND CENTRIFUGED
PALE — RED OILS
WAX — PETROLATUM
TECHNICAL WHITE OILS
WHITE MINERAL OILS

For 35 years of reliability, service and integrity— This Company enjoys an International Reputation

JAMES B. BERRY SONS' CO., INC.
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London — Hamburg

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TANKS, BARRELS, PUMPS, EQUIPMENT

THE following is a partial list of the products which we are regularly supplying to the oil trade. Do not hesitate to send us your inquiry on any special weight or out of the ordinary equipment or any other special steel plate construction:

Field Tanks, up to 55,000 barrels
Bulk Storage Tanks and equipment complete
Fuel Oil Tanks, all types and sizes
Truck Tanks, oval, round, square, or semi-rectangular
Fuel Oil Truck Tanks, insulated and with heating arrangement
Lubricating Oil Plants, including complete compounding equipment
Grease and Soap Kettles, steam jacketed, with air or mechanical agitator
Steel Drums, complete line
Rotary and Plunger Type Pumps, valves, and fittings

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964 Berry Avenue **St. Paul, Minn.**

Tear off this Coupon and Mail it *Today*

Interested in.....

Size..... Truck.....

Other Equipment.....

Name.....

Address.....

Crude Oil Prices (in Effect March 4, 1929)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective March 14, 1927

Grades A	$1.20	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on all below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.:

(Salt Creek prices effective Jan. 25, 1929)

‡Salt Creek 29-29.9	$0.90
" " 30-30.9	0.96
" " 31-31.9	1.02
" " 32-32.9	1.08
" " 33-33.9	1.11
" " 34-34.9	1.14
" " 35-35.9	1.17
" " 36-36.9	1.20
" " 37 and above	1.23
Elk Basin	1.36
Grass Creek light	1.36
Big Muddy	$1.28
Lance Creek	1.38
Rock Creek	1.18
Mule Creek	1.10
Rex Lake	1.10
‡Osage	1.38
‡Cat Creek, Mont.	1.48
Sunburst, Mont.	1.65
‡Hogback, N. Mex.	1.53
Artesia, N. Mex.	1.08

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

***Standard Oil Co. of California**

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach	Inglewood Torrance	Olinda-Brea Canon Richfield	Athens-Rosecrans Dominguez	Elwood Terrace	Whittier La Habra	Coyote Hills	Santa Fe Springs	Newhall McKittrick †Kern River	Midway, Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Montebello	Kettleman Hills	*Santa Maria (Orcutt)	*Ventura
14–14.9	$ .70	$ .70	$ .70	....	....	$ .70	$ .70	....	$ .50	$ .50	$ .50	$ .50	$ .50	$ .70	....	$ .65	$ .70
15–15.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
16–16.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
17–17.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
18–18.9	.75	.75	.75	....	....	.75	.75	....	.50	.56	.56	.56	.56	.70	....	.70	.75
19–19.9	.80	.80	.80	....	....	.80	.80	....	.50	.62	.62	.62	.62	.75	$1.65	.70	.80
20–20.9	.85	.85	.85	....	....	.84	.84	....	....	.68	.68	.68	.68	.80	for	.70	.85
21–21.9	.89	.89	.89	....	....	.88	.88	.89	....	.74	.74	.74	.74	.85	55°	.86	.86
22–22.9	.93	.93	.93	....	....	.91	.91	.92	....	.80	.80	.80	.80	.90	gravity	.87	.87
23–23.9	.97	.97	.97	....	....	....	.94	.95	....	.85	.85	.85	.85	.95	and	.90	.90
24–24.9	1.01	1.01	1.01	1.01	$0.94	....	.97	.98	....	.90	.90	.88	.88	.98	over	.94	.94
25–25.9	1.05	1.05	1.05	1.05	.98	....	1.00	1.01	....	.95	.95	.91	.91	1.01	....	.98	.98
26–26.9	1.09	1.09	1.09	1.09	1.02	....	1.04	1.04	....	1.00	1.00	.94	.94	1.04	....	1.02	1.02
27–27.9	1.13	1.13	1.13	1.13	1.06	....	1.08	1.07	....	1.05	1.05	.98	.97	1.07	....	....	1.06
28–28.9	1.17	1.17	1.17	1.17	1.10	....	1.12	1.10	....	1.10	1.10	1.02	....	1.10	....	....	1.10
29–29.9	1.21	....	1.21	1.21	1.14	....	1.16	1.15	....	1.16	1.16	1.06	....	1.13	....	....	1.14
30–30.9	1.25	....	1.25	1.25	1.18	....	1.20	1.20	....	1.22	1.22	1.10	....	1.16	....	....	1.18
31–31.9	1.30	....	....	1.30	1.23	....	....	1.25	....	1.28	1.28	1.14	....	....	....	....	1.23
32–32.9	1.35	....	....	1.35	1.28	....	....	1.30	....	1.34	1.34	1.18	....	....	....	....	1.28
33–33.9	....	....	....	1.41	1.34	....	....	1.35	....	1.40	1.40	1.22	....	....	....	....	....
34–34.9	....	....	....	1.47	1.40	....	....	1.40	....	....	1.46	1.26	....	....	....	....	....
35–35.9	....	....	....	1.53	1.46	....	....	1.45	....	....	....	1.30	....	....	....	....	....
36–36.9	....	....	....	1.59	1.52	....	....	1.50	....	....	....	....	....	....	....	....	....
37–37.9	....	....	....	1.65	1.58	....	....	1.55	....	....	....	....	....	....	....	....	....
38–38.9	....	....	....	1.71	1.64	....	....	1.60	....	....	....	....	....	....	....	....	....
39–39.9	....	....	....	1.77	1.70	....	....	1.65	....	....	....	....	....	....	....	....	....
40–40.9	....	....	....	1.83	1.76	....	....	....	....	....	....	....	....	....	....	....	....
41–41.9	....	....	....	1.89	1.82	....	....	....	....	....	....	....	....	....	....	....	....
42–42.9	....	....	....	1.95	1.88	....	....	....	....	....	....	....	....	....	....	....	....

*Santa Maria and Ventura postings are by Union Oil Co. Union Oil Co. posts same prices in all above fields as Standard except in Montebello and Wheeler Ridge. Elwood Terrace is posted at same prices by Standard. Standard does not contract for crude testing 11-13.9 gravity, but pays 45c a barrel when purchased.

†Kern River down to 12° gravity is 50c; 11-11.9 is 45c.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	Mar. 4	Feb. 25
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.55	$1.55
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums cwt.	$0.80	$0.80
Sal Soda wks	$0.90-1.00	$0.90-1.00
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks	$18.50	$18.50
Sulfur, flowers of cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks lb.	3.00-4.50	3.00-4.50

Compounders' Supplies

	Mar. 4	Feb. 25
Vegetable Oils		
Linseed carloads, spot lb.	10.20	10.20
Tanks, spot	9.30	9.30
Soya Bean, Tanks, coast, lb.	10.00	10.00
Oleic Acid		
Distilled, tanks lb.	9.75	9.75
Distilled, bbls. lb.	10.75	10.75
Saponified, tanks lb.	10.25	10.25
Saponified, bbls. lb.	10.75	10.75
Lard Oils		
Prime Winter Strained lb.	15.75	15.75
Extra Winter Strained lb.	13.75	13.75
Extra lb.	13.50	13.50
Extra No. 1 lb.	13.25	13.25
No. 1 lb.	13 125	13 125
No. 2 lb.	12.875	12 875
Tallow oil lb.	12.00	12.00
Neatsfoot Oil		
Pure, bbls. lb.	15.00	15.00
Extra, bbls. lb.	13.50	13.50
No. 1 bbls. lb.	13.25	13.25
Cold Pressed lb.	18.75	18.75
Fish Oils		
Menhaden Oil		
Light Pressed gal.	72-73	72–73
Light Pressed, tank cars, N.Y. gal.	65	65
White bleached gal.	78-79	78-79
Yellow bleached gal.	75-76	75-76
Whale, extra winter bleached, gal.	82	82
Naval Stores		
Steam distilled turpentine, N. Y. gal.	55	55
Steam distilled turpentine, Savannah gal.	50	50
Gum turpentine, N. Y. gal.	57	57
Gum turpentine, f.o.b. cars Savannah gal.	54	54
Wood Rosin F, N. Y. bbl.	$8.00	$8.00
Wood Rosin F, Savn'h bbl.	$7.20	$7.20
Gum Rosin B, N. Y. bbl.	$8.00	$8.00
Gum Rosin B, f.o.b. cars Savannah bbl.	$7.25	$7.25
Rosin oil, pure gal.	62	62
Rosin oil, compounded gal.	51	51
Pine Tar		
Kiln burnt bbl.	$13.00-14.00	$13.00-14.00
Retort bbl.	$13.50-14.50	$13.50-14.50
Alcohol		
Denatured, Formula 5, in bbls., per gal.	55-62	55-62

Actual Price Posted In Atlanta

ATLANTA, March 2.—Standard Oil Co. of Kentucky, effective March 1, "blew the foam off" the rather fantastic Atlanta gasoline market structure by eliminating all commercial discounts and making the tank wagon price and the filling station price the same. The change was local to Atlanta.

The situation brought about by this price change is not as bad as it sounds. The term "tank wagon price" in Atlanta had long ago lost its meaning. There has been such a maze of commercial and dealer discounts to various kinds of customers that the service station price was nominal, a figure at which only a small part of the city's gallonage moved. For instance:

Prior to March 1, the posted service station price was 23 cents a gallon. The posted tank wagon price was 21 cents a gallon. And below that was a 2-cent dealers' discount enabling all retail dealers and truck fleet owners who had storage tanks and bought gasoline from tank trucks to enjoy a delivered price of 19 cents a gallon.

Superimposed on that unusual price structure was a rule that commercial accounts not having tanks and not able to buy from tank trucks would be allowed to buy gasoline through the filling station at the posted tank wagon price. This rule was parent of most of the abuses. At times almost anybody could get gasoline at a service station for the tank wagon price.

Any firm or individual having a motor truck classified as a commercial account and all their pleasure cars enjoyed the tank wagon price at filling stations. Individuals not having trucks could not get gasoline at stations of major companies at the tank wagon price but by shopping around among their garage friends they usually got taken care of.

The result was that the retail posting of 23 cents a gallon was a sort of "first asking price." Nobody paid it but the improvident spendthrift or the unwary tourist. It was estimated here last month that nearly 95 per cent of all gasoline sold at filling stations was sold at the tank wagon price.

Now the posted service station price in Atlanta is 21 cents. The posted tank wagon price also is 21 cents. The dealer's discount is still two cents which makes a delivered price of 19 cents from tank trucks to dealers and other large accounts. The commercial accounts that used to enjoy the tank wagon price at the service station still get it. They pay just what they always paid but it happens to be also the filling station price paid by everybody else who comes along.

The change involves very little in the way of money. It means that the oil marketers are about to quit "kidding themselves" by making false entries on their books and then subtracting 2 cents. Now the price structure is simple. The retail price of gasoline is 21 cents to everybody. The dealer has a 2-cent spread.

Unfortunately the terminology is confused. What is called the "tank wagon price" in most places is not so called in Atlanta. But some oil men expect an early adjustment of that situation. The retailers express themselves rather freely as expecting it to culminate in a flat 3-cent spread between tank wagon and filling station price, before the summer season.

Motor Car Sales Rose 19 Per Cent in 1928

NEW YORK, March 2.—*Automotive Industries* in its annual statistical issue said:

Motor vehicle sales throughout the country in 1928 increased 19 per cent over 1927 but represented a 6 per cent decrease from 1926. In this connection it is interesting to note that the industry appears able to maintain a very close relation between production and profits, a recent analysis of the 1928 earnings of six car companies producing over 45 per cent of the industry's total, showing an average gain of 19 per cent as compared with 1927. This, it will be seen, is in direct ratio to the gain in production.

During both 1927 and 1928 the sales of General Motors units occupied the same relative position in the industry as a whole as Ford did in 1925, having supplied over 42 per cent of all cars sold during those two years. With Ford apparently once more under full way at the opening of the 1929 selling season, with a new model for sale, with only slightly decreased dealer representation and with an aggressive advertising campaign launched, it is going to be very interesting to see how far he will be able to recover his old position and at whose expense it will be done if it is accomplished.

There are now in the United States nearly 2000 more dealers handling passenger cars than there were in 1928, and nearly 2000 more truck dealers. Additions in both lines have been made by other makers than Ford, since his dealer representation declined slightly during 1928, but not enough, apparently, to affect his 1929 sales efforts to any degree.

Atlantic Offers New Gasoline

JACKSONVILLE, March 2.—Coincident with the opening of its own marketing outlets at seven Florida and south Georgia points, Atlantic Refining Co. is offering the southern trade a new gasoline. It is advertised as "Extra power, new type" Atlantic gasoline high in anti-detonating qualities.

Service station salesmen at the three Jacksonville service stations tell the trade that the product is 100 per cent petroleum, having no content of any foreign chemical and that its anti-detonating quality is a result of a special process of refining a special crude. It is manufactured at the Philadelphia refinery from Winkler crude.

Until a few years ago, Atlantic Refining Co. marketed in the southeastern states through Independent jobbers exclusively, but the recent policy of certain major companies to acquire the Independent jobbing outlets for their own products has been met by the Atlantic with a program of building its own stations.

It is reported that the new anti-knock gasoline which Atlantic is now offering in the south has been manufactured in Philadelphia since early last spring. A cargo of it was shipped down to the Jacksonville terminal recently to be used in opening the southern territory. Competitors assume that the same product will be available from the Atlantic's plant in Brunswick, Ga., in the early future.

North Carolina Hikes Gasoline Tax

RICHMOND, Va., Feb. 28.—The North Carolina state senate has passed the "Administration" highway bill which provides for an increase of 1 cent per gallon in the gasoline tax. The present tax in North Carolina is 4 cents per gallon. The bill already has been passed by the house. Only one dissenting vote was cast against the measure in each branch of the assembly.

The bill provides that $2,500,000 raised by the additional 1 cent tax will be augmented by $500,000 from the general highway fund and apportioned to various counties to permit them to reduce ad valorem road taxes. The bill provides also for $500,000 of state road moneys to be used on county roads by the state highway commission.

BURLINGTON, N. C., March 2.—**Manley Baker,** president and founder of the Oil Delivery Co. of Burlington, died at 11 o'clock Friday morning, Feb. 22, from a heart attack.

for Economical Transportation

CHEVROLET

This Great New Six-Cylinder 1½ Ton Truck—$545

(Chassis only) f.o.b. factory Flint, Michigan

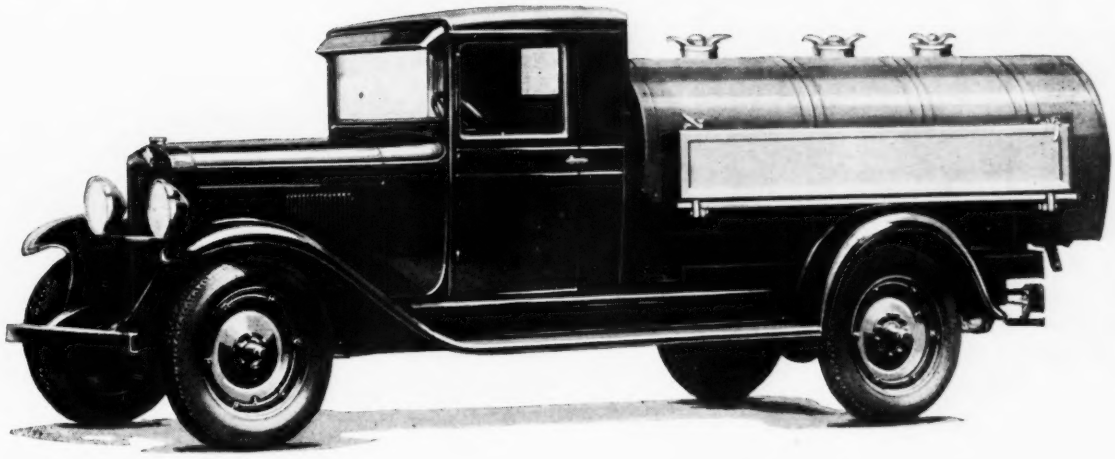


Illustration shows *TANK* body mounted on Chevrolet 1½ ton chassis with cab.

32% more Power

7 inches more Wheelbase

Economy equal to its 4-Cylinder Predecessor

Greater Speed

50% more Capacity

4 Speeds Forward

4-Wheel Brakes

At a price of $545, the new six-cylinder 1½ Ton Chevrolet Truck makes available a dollar-for-dollar value that has never been duplicated in the commercial car industry!

Its new six-cylinder valve-in-head motor provides a power increase of 32%. It accelerates faster in every gear. It operates smoothly and quietly. And its fuel-economy and cost of maintenance are fully as low as those of its famous 4-cylinder predecessor!

Combined with this increased power and finer performance are a wheelbase of 131 inches and a rugged 189-inch frame—providing a carrying capacity of 1½ tons, with load space up to 9 feet. Throughout the entire chassis are found basic improvements that contribute to its outstanding performance, economy and safety: perfected four-speed transmission . . . ball bearing steering mechanism . . . powerful, quiet 4-wheel brakes, with independent emergency brake . . . and a completely equipped instrument panel!

Investigate this remarkable truck—extremely dependable and economical, it is ideally fitted for *your* business!

1½ Ton Chassis, $545 1½ Ton Chassis (with cab), $650 Light Delivery Chassis, $400 Sedan Delivery, $595. *All prices f. o. b. factory, Flint, Michigan*

CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN
Division of General Motors Corporation

Q U A L I T Y A T L O W C O S T

Transactions in Oil Shares on New York Stock Exchange

1928 High	1928 Low	1929 High	1929 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Mar. 2 Sales	First	High	Low	Last	Change
43⅞	27⅛	42⅝	31½	(sh) 922,075	N.P.	Amerada Corp	50cQ	Jan 31, 29						
85	51¼	64¾	44	(sh) 209,180	N.P.	American Republics Corp			11,400	45⅞	53	45	50⅛	+ 4⅛
53⅜	37½	47	43	$56,000,000	$25	Associated Oil	50cQ	Dec. 31, 28	180	46½	46½	44	44	— 1
62½	50	68	53½	50,000,000	25	Atlantic Refining (New stock)	25cQ	Dec. 15, 28	108,000	55⅝	58½	55⅛	56⅝	+ 1
118¼	114½	117⅝	115	20,000,000	100	do pfd	$1.75Q	Feb 1, 29	340	115½	116¾	115½	116	+ ¼
53	20	46⅞	38¼	47,261,125	25	Barnsdall Corp. A	50cQ	Feb 5, 29	252,000	39⅛	41⅝	38⅛	40	+ 1
51¾	20	49	38⅛	300,525	25	do B	50cQ	Feb. 5, 29	700	38⅛	38⅛	†38⅛	38⅛	— ⅜
24½	12¼	28½	20	(sh) 956,075	N.P.	Beacon Oil			14,500	21	24¾	21	23½	+ 2⅞
36	25¼	29⅞	26¾	$51,524,150	$25	California Petroleum	25cQ	Jan. 1, 29	30	26¾	26¾	†26¾	26¾	— ¼
94⅞	68	81¼	66⅜	21,031,400	100	General Asphalt			4,500	70	71⅞	68⅜	71½	+ 1½
141	110⅛	120¼	108⅞	6,628,200	100	do pfd	$1.25Q	Mar. 1, 29	1,000	109	114	109	114	+ 4¾
167	79	107	83¼	25,000,000	100	Houston Oil			3,700	84	89⅞	†83¼	84	— 1
38⅜	21¾	35¼	30	(sh) 1,333,157	N.P.	Independent Oil & Gas	37½cQ	Jan. 31, 29	15,700	31	31⅞	30⅝	31	+ ⅜
39⅝	9	42¾	29	$4,299,190	$10	Indian Refining	....	Dec. 15, 20	33,500	35½	37⅛	34½	36	+ 1½
37¼	8½	42⅜	28	4,550,110	10	do ctfs			19,600	32½	35⅞	32	35⅞	+ 3¼
185	140	165	160	1,977,700	100	do pfd. new	$1.75Q	Jan. 2, 29						
39⅛	27⅜	33	26¼	3,992,387	N.P.	Lago Oil & Transport	75cQ	Feb. 1, 29	12,600	28¼	30¼	28¼	29½	+ 1½
19¾	9⅜	18	13⅝	(sh) 1,187,298	N.P.	Louisiana Oil Refining			15,500	14⅞	15¼	14⅛	14¼	— ⅛
96	78	100	89	$4,000,000	$100	do pfd	$1⅝Q	Feb. 15, 29	960	95	*100	92	93	— 7¼
25½	12½	17¼	12	(sh) 330,000	N.P.	Maracaibo Oil	....		2,000	13	14⅜	13	13½	+ ⅛
49¾	33	47⅛	35⅞	(sh) 2,316,897	N.P.	Marland Oil Co	....	Mar. 31, 27	94,500	37½	41¾	36½	39½	+ 2⅝
360	250	275	250	$45,942,800	$100	Mexican Petroleum	$3Q	Jan 20, 29						
				12,000,000	100	do pfd	$2Q	Jan. 20, 29						
73	45⅝	69⅜	42½	(sh) 995,500	N.P.	Mexican Seaboard	....	Nov. 15, 24	91,900	45	49¾	44½	47¾	+ 2½
44½	25⅛	39⅞	30½	(sh) 1,857,461	N.P.	Mid-Continent	....	Aug. 1, 27	25,600	32	32½	31⅜	32	+ ⅜
120½	103¼	121	120¼	$6,718,000	$100	do pfd	$1.75Q	Mar. 1, 29						
7⅜	2⅜	5⅛	3⅞	23,849,720	10	Middle States	....	July 1, 23	12,800	4	4	3⅞	4	0
5⅞	1½	3½	2¾	5,950,500	10	do ctfs	....		5,400	2⅝	3	2⅝	2¾	0
2¼	1	1½	1⅛	(sh) 3,500,000	N.P.	Pacific Oil	....		9,700	1⅛	1¼	1⅛	1⅛	0
55½	38¼	50	40¼	$50,000,000	$50	Pan American P. & T.	....	Oct. 20, 27	2,100	41½	43½	41¼	43½	+ 3
58⅞	37⅜	51⅞	40½	121,101,400	50	do B	....	Oct. 20, 27	37,400	41½	44⅜	41	43	+ 2⅜
28⅜	15½	17½	14⅝	(sh) 400,000	N.P.	Pan American Western B	....	Jan. 30, 27						
21⅜	11½	15¼	9½	(sh) 199,370	N.P.	Panhandle P. & R	....		1,500	9¾	10¼	9¾	10⅛	+ ⅜
106¼	70	76	47½	$2,935,200	$100	do pfd		July 2, 23	300	47½	52½	47½	52½	+ 2½
53⅞	35¼	47	37¼	(sh) 2,406,803	N.P.	Phillips Petroleum	‡37½cQ	Jan. 2, 29	30,100	37¼	39⅛	37¼	38⅞	+ 1
5¼	½	2⅞	2¼	$29,622,925	$25	Pierce Oil	....		6,800	2½	2½	2¼	2½	0
50	16¼	43½	30	15,000,000	100	do pfd	....	Feb. 1, 22	800	33½	37⅜	33½	37	+ 3½
6⅝	3½	5⅛	4⅜	(sh) 2,500,000	N P.	Pierce Petroleum	....		9,100	5	5	4¾	4⅞	— ⅛
64⅝	59½	65⅜	58	$60,636,450	$25	Prairie Oil & Gas	....	Aug. 31, 27	14,100	59⅛	60	58¾	59	— ⅛
		59	53⅝	101,250,000	25	Prairie Pipe Line	....		48,100	58	60	57¾	58⅛	— 1⅝
29⅞	16	25⅞	18¼	37,450,850	50	Producers & Refiners	....	Sept. 15, 23	4,200	19⅜	21¼	19	21⅛	+ 1⅜
49⅝	41	43	38⅜	2,845,350	50	do pfd	....	May 1, 25	120	40	41	38¼	41	+ 2¾
31¼	19	28½	23½	75,959,250	25	Pure Oil Co	25cQ	Mar. 1, 29	28,600	24½	25⅞	24¼	24⅞	+ ⅜
119	108	115½	112	13,000,000	100	do 8% pfd	$2Q	Jan. 2, 29	160	115	115	113	114	0
56	23¼	49⅝	40	47,127,725	25	Richfield Oil	50cQ	Feb. 15, 29	37,100	40¼	43½	40	43	+ 2⅝
		41⅞	33¾	(sh) 1,200,000	N.P.	Rio Grande Oil Co			40,100	34⅛	39¼	33¾	37⅜	+ 3⅜
64	44⅝	55¾	49⅞	(sh) 546,646	$13.40	Royal Dutch N. Y. shares	$1.336	Feb. 8, 29	4,100	52½	53⅝	51¾	53⅝	+ 2⅝
57½	39⅜	55¾	43	(sh) 65,203,000	L2	Shell Transport & T	$1.455	July 23, 28	100	46	46	46	46	+ 1⅜
39⅜	23¼	30¼	26	(sh) 12,254,979	N.P.	Shell Union Oil	35cQ	Dec. 31, 28	51,100	27	27½	26⅜	27⅜	+ ⅜
27¼	18⅛	23⅞	18⅝	$8,357,280	$10	Simms Petroleum	40c	Dec. 15, 28	2,900	20	20½	19⅛	20	+ ⅜
46¾	17⅜	45	36	5,494,095	N.P.	Sinclair Consolidated		May 31, 24	191,100	38	40	37⅜	39	+ ¾
110	102½	111	109½	$16,025,200	$100	do pfd	$2Q	Feb 15, 29	400	109¾	110	109¾	109¾	0
42⅝	25	40	33	27,396,590	25	Skelly Oil Co	50cQ	Dec. 15, 28	7,200	34	35⅜	33½	34½	+ ½
80	53	73½	64	(sh) 13,016,435	N.P.	S. O. California	‡62½cQ	Dec. 15, 28	30,100	66	68½	64½	68¼	+ 3½
59¾	37¾	55½	48	$612,095,850	$25	S. O. New Jersey	‡25cQ	Dec. 15, 28	64,100	48⅞	49⅞	48⅛	49¼	+ 1⅜
45½	28¾	45¾	38⅝	434,094,575	25	S. O. New York	40cQ	Dec. 15, 28	66,100	39	40½	38⅝	40	+ 1⅜
77	31½	68½	57¾	(sh) 1,297,847	N.P.	Sun Oil	‡25cQ	Dec. 15, 28	5,500	59¾	59¾	†57¾	58	— 1¼
110	100	105½	100	$5,000,000	$100	do pfd	$1.50Q	Mar. 1, 29	50	104½	104½	103½	104	0
14¼	2½	12	7	(sh) 1,304,698	N.P.	Superior Oil Corp	....	Dec. 20, 20	37,700	8¼	8⅜	7½	7⅝	— ⅜
74¾	50	68	57¼	$211,082,925	$25	The Texas Corp	75cQ	Jan. 1, 29	53,100	57¾	59⅞	57⅝	59⅝	+ 2⅛
26⅝	12⅛	20¼	16¼	8,380,340	10	Texas Pacific Coal & Oil	....	Jan. 3, 28	95,100	19	22⅞	18⅞	20⅝	+ 2⅛
41½	19⅝	37⅝	27⅛	(sh) 2,179,275	N.P.	Tide Water Oil Co	20cQ	Dec. 31, 28	2,400	31½	32	31	31	— 2½
100⅛	86¾	97½	90⅛	$20,321,000	$100	do 5½% pfd	$1.25Q	Feb 15, 29	1,100	91¼	91¼	90⅛	91	— ¾
25	14¾	22	17½	(sh) 4,877,976	N.P.	Tide Water Associated		Aug. 1, 27	18,400	18½	19⅜	18¼	19¼	+ 1
91⅜	81⅞	90	87	$72,989,200	$100	do pfd	$1.50Q	Jan. 2, 29	2,100	88	88½	87	88	— ½
14½	6¾	13	9	(sh) 3,842,029	N.P.	Transcontinental Oil	....		74,400	9⅜	10¼	9	10⅛	+ ⅜
58	42¾	52¼	46	$40,858,375	$25	Union Oil of California	50cQ	Feb. 10, 29	20,000	47	50⅞	46⅝	48⅞	+ 1⅝
128⅛	110	150¼	121⅞	31,101,200	100	Union Tank Car Co	$1.25Q	Mar. 1, 29	3,300	146	149½	145	148	+ 1
44⅞	26	42⅞	33⅞	(sh) 488,359	N.P.	Warner Quinlan	50cQ	Jan. 2, 29	11,700	34½	37¾	34½	36	+ 1⅛
38	20⅛	37⅝	30¼	(sh) 490,000	N.P.	White Eagle Oil & Refining	50cQ	Jan. 20, 29	35,100	38	38	37	37	0
22⅛	17¼	29¾	19½	(sh) 428,967	N P	Wilcox Oil & Gas	....	May 10, 28	4,700	24½	26	23½	24½	— ½

*New High †New Low ††Ex-dividends ‡Also extras s-Stock Total Sales 1,784,140

Pittsburgh Stock Exchange

Transactions Week Ended March 1, 1929

	Sales	High	Low	Last	Change
Ark. Nat. Gas	10,665	4⅜	4¼	4⅜	+ ⅛
do pfd	4,020	8¼	8⅛	8¼	+ ⅛
Dixie Gas & Util.	1,850	13¾	11⅞	13	+ ⅛
Lone Star Gas	1,885	73	71	73	+1½
Plymouth Oil	245	26	25	26	+ ½
Pittsburgh Oil & Gas	34	3½	3½	3½	— ⅜
Salt Creek Cons	10	5½	5½	5½	+½

Financial Notes

Borne Scrymser Co.—Directors and officers re-elected at annual meeting.

Vacuum Oil Co.—Annual meeting will be held March 30 at 61 Broadway, New York.

Standard Oil Co. of Kentucky—Initial dividend on the new $10 stock is 40 cents a share for the first quarter of this year, a rate of $1.60 a year. This is equivalent to $6 a year on the old $25 stock which was split into two and a half shares and a 50 per cent stock dividend issued. The old $25 stock paid $4.50 a year in 1927 and 1928.

Galena Signal Oil Co.—Director and officers re-elected at annual meeting.

Union Oil Co. of California—Dwight Whiting and John A. Jardine elected directors to fill vacancies caused by deaths of W. R. Staats and S. C. Bolt.

Crystal Oil Refining Corp.—Loss of $18,110 reported for January after interest, ordinary taxes and other expenses. In year ended Jan. 31 company had net income of $458,289.

British American Oil Co.—At annual meeting in Toronto, Chairman S. R. Parsons issued a statement that dividends would be continued as at present but in view of large extensions contemplated some new capital might be required later. All directors were re-elected.

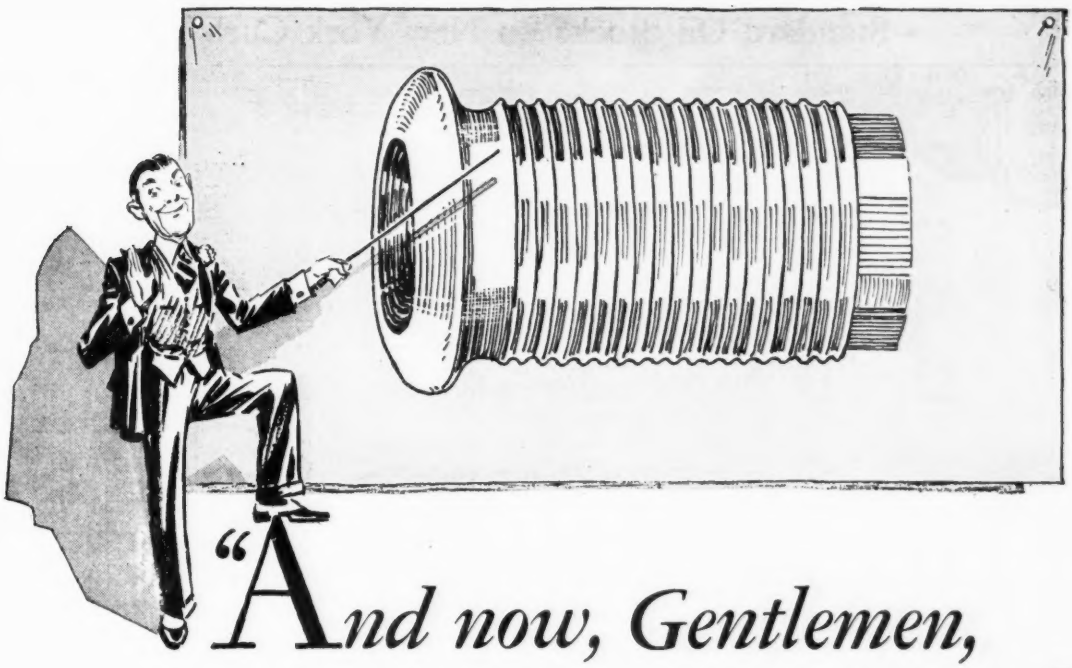
Oil Company Earnings

Whole Year	1928	1927
Atlantic Refining	$16,848,807	$2,315,715
Barnsdall Corp	4,039,861	4,229,796
Humble Oil & Refining	18,924,360	7,111,738
Phillips Petroleum	5,960,171	4,937,931
Prairie Oil & Gas	10,541,597	2,356,061
Rio Grande Oil Co	1,649,600	
Transcontinental Oil	1,506,803	*1,380,146

*Loss.

Cleveland Stock Market

March 1	Par Value	Bid	Asked
Canfield Oil Co	$100	...	145
do pfd	100	103	...
Fred G. Clark	10	10	12
National Refining	25	36	37
do pfd	100	134	139
Paragon Refining	25	26⅞	27
do pfd	N.P.	42¼	42¾
do ctfs. of deposit	...	...	...



"And now, Gentlemen, start asking me questions!"

MR. GIZZARD . . . . What's that thing on the wall there?

Answer . . . . . That big drawing represents the inner cap-nut that goes on over the hub studs and holds the inner section of a Budd-Michelin Dual Wheel on the hub.

• • •

MR. GIBLETS . . . . . What does it do?

Answer . . . . . It anchors the inner wheel so that it can't budge a hair. You notice that it's threaded on the outside. Well, the nut that holds the outer wheel threads right on over this and . . .

• • •

MR. GIZZARD . . . . I see, sure! Budd Duals are held on the hub by double nuts—one holding the inner wheel and one holding the outer wheel. Is that the dope?

Answer . . . . . Perfect! You get a hundred for seeing so well!

MR. LEVINSKY . . קיין אנדער ראָד האָט ניט אזא מין מאונטינג?

Answer . . . . . You're right! No other dual wheel has that double-nut mounting.

• • •

MR. PANEPENTO . Hey Boss, why you can no hav' joos 'ta wan bunch a' cap-a-nuts to hold dosa wheels?

Answer . . . . . Just one set of nuts to hold both sections of the wheel might allow the inner wheel to loosen up. We don't take any chances with that happening on Budd Duals. We anchor both wheels separately so they can't . . .

• • •

MR. JOHNSON . . . Say Mistah man, what ah craves to know is—jes what good dis yere extra cap-nut does when yuh gits on de rode?

Answer . . . . . Why man! That's what I was leading up to. That double set of nuts is the reason . . .

BUDD DUALS

Can't wobble—

Can't shimmy—

And they stop side-sway!

BUDD WHEEL COMPANY, DETROIT

© B. W. Co., 1929

Standard Oil Stocks on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Mar. 2 Sales	First	High	Low	Last	Change
21⅝	17⅞	22⅜	14⅞	L 4,126,460	£ 1	Anglo-American Oil	24.4c	June 6, 28	5,400	16¾	18¾	16¾	18	1½
21½	17⅝	20½	14⅝	.....	£ 1	do cts. non-voting	.....	.....	1,600	16	17	16	16¼	+ ½
3¾	¾	5	1¼	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	300	2	2⅛	2	2⅛	+ ⅛
6½	2½	9¾	3¼	$ 10,000,000	$ 50	do pfd	.....	.....	.....	.....	.....	.....	.....	.....
69	50	56	44½	1,000,000	25	Borne-Scrymser	‡$1S.A.	Oct. 15, 28	100	44	44	44	44	0
60	45	76	58	10,000,000	50	Buckeye Pipe Line	$1Q	Dec. 15, 28	200	68¾	68¾	68½	68½	— 1¼
126	76½	161	117¼	3,000,000	25	Chesebrough Mfg	‡$1Q	Dec. 28, 28	100	143¼	143¼	143¼	143¼	— ¾
22⅝	16¼	23	16	36,123,350	10	Continental Oil	.....	Dec. 15, 27	172,500	23⅝	27⅜	23⅝	26¼	+ 2⅝
14⅞	9½	17½	9½	.....	N.P.	Creole Petroleum	.....	.....	28,500	9¼	10	9⅛	9⅝	+ ¼
137	89	114	67	1,500,000	50	Cumberland Pipe Line	$1Q	Dec. 15, 28	100	75¾	75¾	75¾	75¾	+ ¾
68½	47	88	64½	5,000,000	100	Eureka Pipe Line	$1Q	Feb. 1, 29	.....	.....	.....	.....	.....	.....
13½	3½	13	4¼	16,000,000	100	Galena Signal Oil	.....	June 30, 25	.....	.....	.....	.....	.....	.....
59¾	23	87¾	27	4,000,000	100	do new pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
60⅛	35½	89¾	35	2,000,000	100	do old pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
68½	54	114¾	59¼	73,685,700	25	Humble Oil & Refining	‡30cQ	Jan. 2, 29	14,800	89⅝	93¼	89⅝	91½	+ 1⅞
182	123¾	290½	176½	20,000,000	100	Illinois Pipe Line	$10S.A.	Dec. 15, 28	150	300¼	307	300	307	+ 6½
64¾	37¾	104	56¾	(sh) 6,591,458	N.P.	Imperial of Canada	‡25cQ	Mar. 1, 29	3,200	93⅛	93⅞	91	93½	+ ½
94½	61	91⅞	74⅞	$ 5,000,000	$ 50	Indiana Pipe Line	‡$1Q	Feb. 15, 29	.....	.....	.....	.....	.....	.....
39	28¼	55	35	(sh) 7,123,544	N.P.	International Petroleum	25c	June 30, 28	8,100	54¼	55¾	53½	54	— ¼
24	13¼	32⅜	19⅜	6,363,350	12.50	National Transit Co	25cQ	Dec. 15, 28	800	24¾	25	24½	24⅝	0
44½	31¼	75	38½	5,000,000	100	New York Transit	.....	July 15, 26	100	80	80	80	80	— 1
100	70	69	56½	2,000,000	50	Northern Pipe Line	$2S.A.	Jan. 2, 29	.....	.....	.....	.....	.....	.....
67⅞	52	83½	58	60,000,000	25	Ohio Oil Co	50cQ	Dec. 15, 28	1,000	65	66⅞	65	66⅜	+ 1½
39	12	84	28	10,000,000	25	Penn Mex. Fuel	$75c	Dec. 16, 28	1,000	35	35	32⅝	33	— 2
201½	175½	216	167	4,000,000	100	Solar Refining	$5S.A.	Dec. 20, 28	200	48	48	48	48	0
27¼	15¼	35⅞	12	1,000,000	10	Southern Pipe Line	$1	Mar. 1, 29	100	13	13	13	13	0
41½	35	71⅜	36¾	20,000,000	25	South Penn Oil	‡50cQ	Dec. 31, 28	4,900	63	63½	62½	62½	— 1¼
83	55½	100¾	70	1,750,000	50	South West Pa. Pipe Lines	$1	Oct. 1, 28	50	68¼	68½	68¼	68¼	— 1½
81½	64⅝	95⅞	70⅞	230,788,513	25	S. O. Indiana	‡62½cQ	Dec. 15, 28	28,200	87½	88½	86⅞	87⅜	— ⅛
20⅞	14⅝	27¾	15	8,000,000	25	S. O. Kansas	.....	June 16, 24	1,400	19¾	21¾	19⅝	21⅜	+ 2⅛
130	111½	179¾	122¼	25,654,516	10	S. O. Kentucky new	‡$1Q	Dec. 31, 28	7,200	40¼	41⅜	40⅛	40⅜	+ ⅜
49½	40	54⅞	39⅞	4,601,100	25	S. O. Nebraska	‡62cQ	Dec. 20, 28	300	46¾	46⅞	46¾	46⅞	— ⅛
87½	72	134	71	14,000,000	25	S. O. Ohio	62½cQ	Jan. 2, 29	500	110¼	115	110¼	115	+ 4¾
122	117¼	125	116	7,000,000	100	do pfd	$1.75Q	Mar. 1, 29	120	123½	123½	121	121	— 1
21	14½	23½	16	861,466	25	Swan Finch Co	30c	Jan. 15, 29	.....	.....	.....	.....	.....	.....
...	...	111	72	126,154,100	25	Vacuum Oil	‡75cQ	Dec. 20, 28	56,500	122⅞	126	120¼	123⅝	+ 3⅞

•New high †New low xEx dividend ‡Also extras (a) $50 Special Sept. 1, 1928

Independent Oils on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended Mar. 2 Sales	First	High	Low	Last	Change
2⅛	.55	1½	.53	$ 5	Amer. Con. Oilfields	6,500	60	61	60	60	0
7½	2¾	9½	3⅛	N.P.	Amer. Maracaibo	.....	.....	.....	.....	.....	.....
2⅜	1	4½	2¼	$ 10	Argo Oil	1,700	2¼	2¼	2	2⅛	— ⅛
9¾	6¾	10¼	3⅜	10	Arkansas Nat. Gas	6,800	4⅜	4⅞	4⅜	4⅞	+ ½
40	20½	55	29⅞	N.P.	British American	800	50	53	50	53	0
28¼	15½	23⅞	3¾	25c	Carib syndicate N	1,300	3	3	2⅝	2⅝	— ⅜
58¾	40¼	90⅞	54	$ 20	Cities Service	93,500	114¾	120¼	114½	120	+ 6
95⅛	87	103½	94½	100	do pfd	7,400	96½	97½	96⅜	97½	+ ¾
8⅞	7⅛	9⅜	8⅛	10	do pfd. B	800	9	9	9	9	0
29¼	22½	....	28¼	10	do banker's shares	.....	.....	.....	.....	.....	.....
3⅞	1⅜	2¼	1	1	Colombia Syndicate	7,900	1½	1½	1¼	1¼	— ⅛
.....	....	17⅜	9¾	....	Colon Oil	2,400	10½	10⅞	10	10¼	— ⅞
9¾	6⅜	8⅜	6¼	10	Consolidated Royal	15,500	8¾	11⅛	8⅛	10¼	+ 2⅝
3	.50	3¼	.76	N.P.	Crown Central	600	1⅜	1⅜	1⅜	1⅜	0
....	....	15	6¾	....	Crystal Oil	500	8	9	8	9	0
....	....	58	48	....	do pfd	.....	.....	.....	.....	.....	.....
12	4	33¼	8⅛	N.P.	Darby Petroleum	800	20½	21	20½	21	— ¼
11½	4	13½	7⅛	....	do trust ctfs	.....	.....	.....	.....	.....	.....
2½	.74	2⅞	1	N.P.	Derby Oil & Refining	200	2¾	3	2¾	2¾	+ ½
16¾	4	21⅛	7½	N.P.	do pfd	.....	.....	.....	.....	.....	.....
3¾	1	2	1	N.P.	Gibson Oil	.....	.....	.....	.....	.....	.....
2	.40	.53	.15	N.P.	Gilliland ctfs	.....	.....	.....	.....	.....	.....
118	86¼	165	101⅜	$ 25	Gulf Oil Corp	3,800	147⅝	152	147⅝	150⅞	+ 3¾
2½	.80	3⅛	1	10	Intercontinent Pet	4,100	1¾	1⅞	1¾	1⅞	0
2¼	1⅜	3	1¼	N.P.	Kirby Petroleum	400	2	2	1⅞	2	— ⅛
10⅞	5⅛	9⅛	5⅛	N.P.	Leonard Oil & Dev	8,000	5	5	5	5	0
27½	20	43¾	20	N.P.	Lion Oil & Refg	500	28½	28⅛	26	26	— 4
59⅜	37	69⅛	48⅛	$ 25	Lone Star Gas	1,100	72	72¾	71⅛	72⅜	+ 1¾
2⅞	.80	1⅞	.50	1	Magdalena Synd	6,000	79	79	71	75	+ 4
52	12	45	34	N.P.	Margay Oil	100	34	34	34	34	0
3	1½	40½	40¼	$ 10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
12⅛	5	8	2¾	N.P.	Mexico-Ohio Oil	200	5½	5½	5½	5½	+ ½
1½	1	1¼	.76	$ 1	Mountain & Gulf	700	1¼	1⅜	1⅛	1¼	0
29¼	22¾	25⅝	19½	10	Mountain Producers	2,800	21¾	22	21	21½	0
5⅞	4⅝	5⅝	4¼	5	New Bradford	600	4⅜	3⅝	4⅜	4½	— ⅛
6¼	4	5½	2¾	10	New England Fuel	.....	.....	.....	.....	.....	.....
16	9¼	11⅝	7⅛	1	New Mex. & Ariz	1,200	7⅝	8	7⅝	8	0
13⅞	9	15½	11½	25	New York Oil	.....	.....	.....	.....	.....	.....
....	....	40	39½	....	North Amer. Oil Cons.	.....	.....	.....	.....	.....	.....
12¾	9½	13¼	9	N.P.	North Cent. Texas	.....	.....	.....	.....	.....	.....
....	....	....	....	N.P.	Oil Stocks, Ltd. A	1,200	16¼	16¼	16	16	— ⅛
....	....	....	....	N.P.	do B	400	15⅞	16	15⅞	16	0
9⅜	3¼	6	2¼	N.P.	Pandem	4,500	2⅛	3	2	3	+ 1
12⅛	7	15⅜	8½	N.P.	Panapec Oil	6,500	8¼	9	8⅛	8½	+ ⅜
9	7⅝	20	10⅝	$ 25	Paragon Refg. B ctfs	.....	.....	.....	.....	.....	.....
.37	.25	9	4	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
13½	5⅛	7¾	4⅞	10	Pennok Oil	600	4⅝	4¾	4⅝	4⅝	+ ¼
....	....	....	....	N.P.	Petroleum Corp	121,000	34	34⅛	34	34⅛	0
....	....	5½	3⅛	5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
....	....	31⅜	26½	....	Plymouth Oil	1,900	23	25½	23	25½	+ ⅛
24⅜	7	18	8	25	Red Bank Oil	100	16	16	16	16	0
15½	3½	13	4⅜	N.P.	Reiter-Foster	11,500	6⅜	8½	5½	7⅜	+ 1⅞
28⅜	15	25½	22	$ 25	Richfield Oil pfd	700	24½	24¾	24½	24½	— ⅛
7	4½	12	4⅝	N.P.	Ryan Consolidated	1,700	9⅛	9⅛	8⅜	8⅜	— ¼
8	5¼	7¼	5⅝	$ 10	Salt Creek Cons	500	5¼	5¼	5⅛	5¼	+ ⅛
35½	27¾	35	23¾	10	Salt Creek Prod	4,700	24¼	25⅜	24¼	24¾	+ ¾
7	1¼	3½	1	5	Savoy Oil	.....	.....	.....	.....	.....	.....
....	....	4⅝	3	N P.	Texon Oil & Land	5,600	16⅝	18⅞	16⅝	18½	+ 1½
26½	17	22⅞	13	10	Tidal Osage	1,200	12¼	14⅛	12¼	12¼	— 1¼
23¾	15	21¼	13⅜	10	do non-voting	100	11½	11½	11½	11½	+ ⅜
92	63½	93¾	75	100	Transcontinental pfd.	200	82	82	82	82	0
23⅛	7	74⅛	18	10	Venezuela-Mexico	.....	.....	.....	.....	.....	.....
7⅝	4⅛	9⅛	4¾	5	Venezuelan Petrol	3,600	4⅞	5	4¾	4⅞	— ⅛
8	4⅝	8⅛	4⅞	$ 1	Woodley Petroleum	500	7¼	9	7	9	+ 1½
6	1¾	8⅜	2⅛	25	Y Oil & Gas (new)	3,900	3⅝	3¾	2¾	3¼	— ½

•New High †New Low x Ex Dividend

New York Curb Bonds

Week Ending March 1

	High	Low	Last	Change
Beacon Oil 6s '36	112¼	110	110	—2¾
Cities Serv. 5s '66	90	89⅛	89¾	+ ¼
Cities Serv. G. 5½s '42	91	90½	90½	0
Cities Serv. G. Pipe 6s'43	96	95	95¾	—1¼
Cont. Oil 5¼s '37	96	74	95	+ ½
Empire O & R 5½s '42	90¼	89⅞	90⅛	+ ⅛
Galena Oil 7s '30	100⅞	100⅞	100⅞	0
Gulf Oil 5s '37	100	99⅝	99⅝	— ⅜
Gulf Oil 5s '47	101	100	100¾	+ ⅜
Indep. Oil 6s '39	106½	105¼	106¼	+1¼
Richfield Oil 5½s '31	100⅜	100	100¼	— ⅛
Sun Oil 5½s '39	101	100¾	100¾	0
Valvoline Oil 7s '37	103	103	103	0

New York Bonds

Week Ending March 1

	High	Low	Last	Change
Assoc. Oil gold 6s	103	102½	102½	— ½
Atlantic Refg. deb. 5s	100½	100⅛	100½	+ ½
Cal. Pet. 5s	99½	99	99¼	+ ¼
Cal. Pet. 5½s	102	102	102	— ½
General Asphalt 6s	105	104	105	+ ¼
General Pet. 5s	101½	101	101	— ⅛
Humble Oil & Refg. 5s	100	99¼	100	+ ⅛
Humble Oil & Refg. 5½s	101½	100¾	101⅜	0
Pan Amer. P & T. 7s	104¾	104½	104¾	+ ¼
Pan Amer. P. & T. 6s	102¾	102½	102¾	+ ¼
Pan Amer. P. & T. 6s	95½	95	95	0
Phillips Pet. 5½s	91½	90	90	—1½
Pure Oil 5½s	98	97¼	98	+ ½
Shell Union Oil 5s	97	96¼	96¾	— ⅜
Simms Pet. 6s	99	99	99	—1
Sinclair Con. Oil 7s	103⅛	102	102⅜	— ⅝
Sinclair Con. Oil 6½s	100½	100⅛	100⅛	— ⅜
Sinclair Con. Oil 6s D	99½	99¼	99⅜	+ ⅛
Sin. Con. Oil Crude 5½s	97⅜	96½	97⅜	+ ⅜
Sinclair Pipeline	93¾	93½	93½	— ¼
Skelly Oil 5½s	93	92	92	0
S. O. N. Y. 4½s	96½	96	96	— ¼
S. O. N. J. 5½s	102½	101½	102	— ¼
Union Oil of Calif. 6s A	109	108⅞	109	+ ⅛
Union Oil of Calif. 5s C	98¾	98¾	98¾	+ ½
White Eagle Oil 5½s	103⅛	102¼	102¼	— ¾

Oil Dividends

Amount	Payable	Stock of Record
Borne Scrymser s.a. $1	Apr. 15	Mar. 22
do extra 50c	Apr. 15	Mar. 22
Phillips Pet. q 37½c	Apr. 1	Mar. 14
Pure Oil 8% pfd. q $2	Apr. 1	Mar. 9
do 6% pfd. q $1.50	Arp. 1	Mar. 9
do 5¼% pfd. q $1.50	Apr. 1	Mar. 9
South Penn Oil q 50c	Mar. 30	Mar. 15
South West Pa. P. L. $1	Apr. 1	Mar. 15
S. O. Kentucky new q. 40c	Mar. 30	Mar. 15
S. O. Ohio q 62½c	Apr. 1	Mar. 15